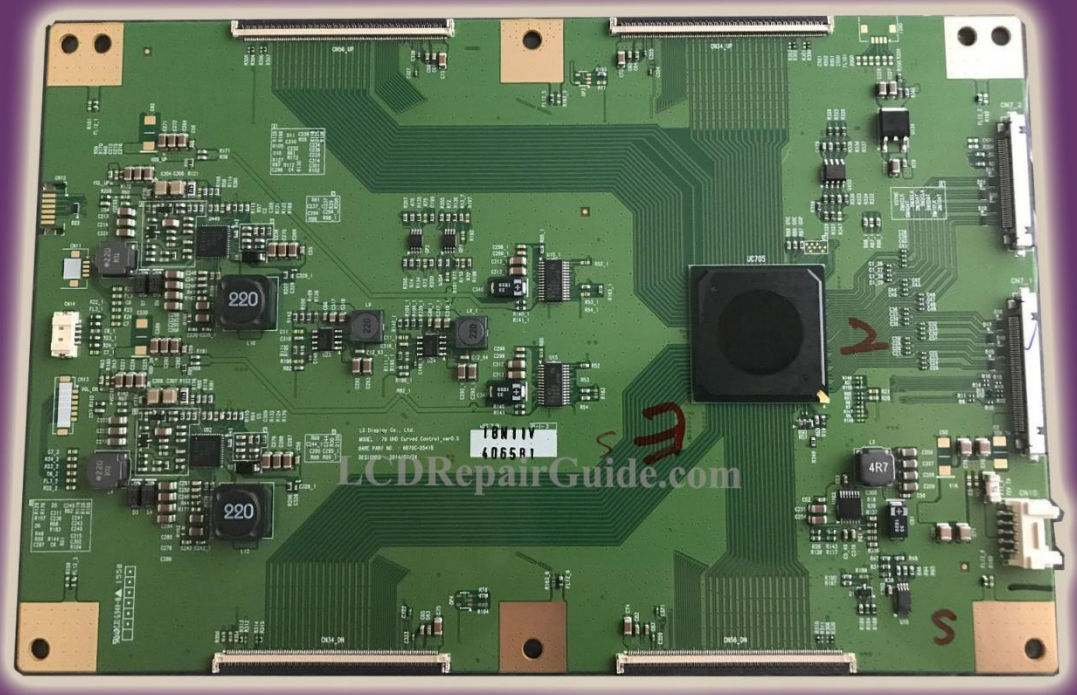
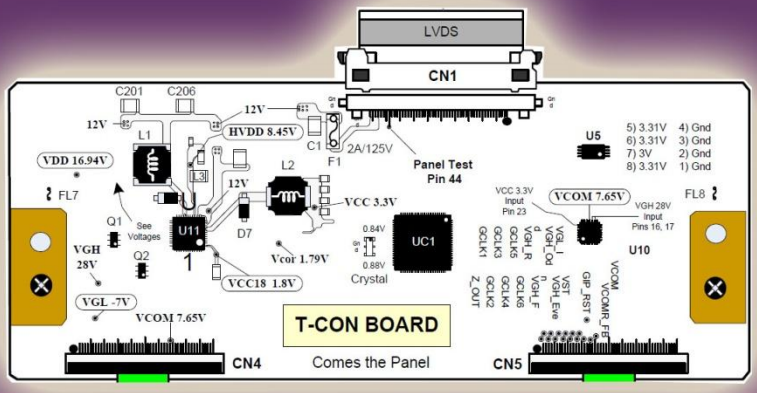
Collection of

LG T-CON Board Testing Points & Voltages





http://www.LCDRepairGuide.com

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3) LG 47LM7600 ……...
4) LG 50LB6500 ……
5) LG 55LA8600 ……
6) LG 55LB7200 ……
7) LG 55LM6700 ……...

T-con Board & Panel Part Numbers:

1) 32LH30 Interconnect ……...

T-con Board P/N: **6870C-0230A** (Similar to 6870C-0266A, LC320WUN)

DESC or Panel Sticker Number: LC320WUN-SAB1

2) 37LH55 Interconnect ……..

T-con Board P/N**: 6870C-0264B**

DESC or Panel Sticker Number: LC370WUD-SBM1

3) 42LB5800 Interconnect ……..

T-con Board P/N**: 6870C-0480A**

DESC or Panel Sticker Number: V14 42 DRD 60Hz Control_Ver0.3

4) 42LG70 Interconnect ……..

T-con Board P/N**: 6870C-0202B**

DESC or Panel Sticker Number: LC420WUF-SAA1

5) 42LH20 Interconnect ……

T-con Board P/N: **6870C-0240C**

DESC or Panel Sticker Number: LC-420WXN/LC370WXN (or LC420WXE-SBA1)

6) 42LH50 Interconnect ……

T-con Board P/N: **6870C-4100D**

DESC or Panel Sticker Number: LC420/470WUF-SBM1_SBL

7) 42LH90 Interconnect ……

T-con Board P/N: **6870C-4000H**

DESC or Panel Sticker Number: LC320/420/470/550WU_120Hz Control (LC420WUL-SBM1)

8) 42LK520 Interconnect ……

T-con Board P/N: **6870C-0310C**

DESC or Panel Sticker Number: LC420WUN-SCA1 (or similar LC420WUN-SCB1, LC-420WUE-SCA2, LC420WUE-SCV1)

9) 42LN5300 Interconnect ……

T-con Board P/N: **6870C-0452A**

DESC or Panel Sticker Number: LC420DUE-SFR5, LC420DUE-SFR1 (similar to LC500DUE-SFR1)

10) 42LV5500 Interconnect ……...

T-con Board P/N: **6870C-0358A**

DESC or Panel Sticker Number: LC420EUF-SDA1 (V6 32/42/47 FHD 120Hz)

11) 42SL80 Interconnect ……

T-con Board P/N: **6870C-0259A**

DESC or Panel Sticker Number: LC420WUD-SBM4 (42/47 Slim & Narrow 240Hz CONTROL)

12) 47GA6400 Interconnect ……

T-con Board P/N: **6870C-0444A**

DESC or Panel Sticker Number: LC470EUN-SFF2 (DESC: LC470DUE-SFR1)

13) 47LB6000 Interconnect ……

T-con Board P/N: **6870C-0481A**

DESC or Panel Sticker Number: V14 60Hz 1GID

14) 47LG90 Interconnect ……

T-con Board P/N: **6870C-0188B**

DESC or Panel Sticker Number: LC470WUL-SAA1-731

15) 47LH85 Interconnect ……

T-con Board P/N: **6870C-4000H**

DESC or Panel Sticker Number: LC470WUF-SBB1 (DESC: LC320/420/470/550WU_120Hz CONTROL)

16) 47LN5750 Interconnect ……

T-con Board P/N: **6870C-0444A**

DESC or Panel Sticker Number: LC470DUE-SFU1 (DESC: LC470DUE-SFR1)

17) 47LW5600 Interconnect ……

T-con Board P/N: **6870C-0358A**

DESC or Panel Sticker Number: LC470EUF-SDF2 (DESC: V6 32/42/47 FHD 120Hz)

18) 47LX6500 Interconnect ……

T-con Board P/N: **EAX62110705 (0)**

DESC or Panel Sticker Number: LC470EUS-SCA1

19) 47LX9500 Interconnect ……..

T-con Board P/N: **EAX61764003(3)**

DESC or Panel Sticker Number: LX95M47T480V5 (DESC: LA02M)

20) 55EA9800 Interconnect ……..

T-con Board P/N: **6870C-0468B**

DESC or Panel Sticker Number: LC550LUD-MFP2-L31

21) 55GA6400 Interconnect ……

T-con Board P/N: **6870C-0444A**

DESC or Panel Sticker Number: LC470DUE-SFR1

22) 55LA9700 Interconnect ……

T-con Board P/N: **6870C-0467A**

DESC or Panel Sticker Number: LC550EQD

23) 55LM6200 Interconnect ……

T-con Board P/N: **6870C-0401B**

DESC or Panel Sticker Number: LC550EUE-SEF1 (DESC: 32/37/42/47/55 FHD TM120)

24) 55LM8600 Interconnect ……

T-con Board P/N: **EAX64583702-1.0**

DESC or Panel Sticker Number: LC550EUH-PEF1

25) 55LW5700 Interconnect ……

T-con Board P/N: **6870C-0369B**

DESC or Panel Sticker Number: LC550EUF-SDF1 (DESC: V6 55 FHD 120Hz)

26) 55LX6500 Interconnect ……..

T-con Board P/N: **EAX62110705(0)**

DESC or Panel Sticker Number: LC550EUC-SCA1

27) 79UB9800 Interconnect ……

T-con Board P/N: **6870C-0541B**

DESC or Panel Sticker Number: (DESC: 79 UHD Curved Control)

How to Use this Guide?

1) This guide will help the repairer easy to see and find the testing points of their T-con board. You can also easy to learn what's commonly testing points and voltages values in LG T-con board.

2) With this guide, you can see the T-con board small fonts easily with the help of PDF viewer ZOOM IN feature.

3) Not only that, you also can compare each T-con board has difference circuit design and signal control lines. So from this guide, you can easily to find out what's difference in each T-con board easily.

4) Attention: All the testing voltage values and waveform are based on their LG Interconnect TV Models.

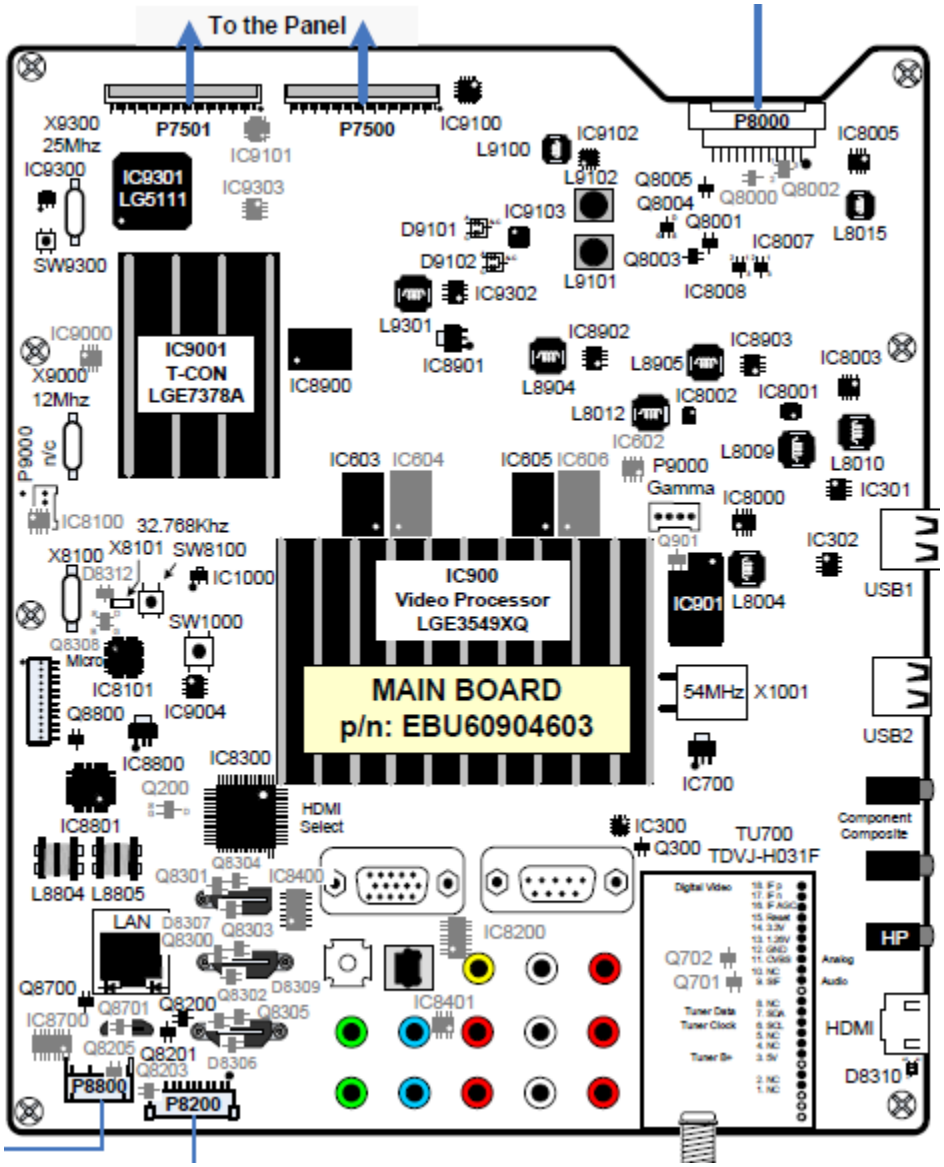
5) From this guide, you can also find out some of the T-con board just one part number but can use in different sizes of LCD/LED Panel. But the different is their firmware inside the T-con board only! (Some maybe need to change some resistor/s (ohm values or the position/location) setting on the board to match the panel and causing it working properly.

These Models of LG TV T-con section is built-in Mainboard

1) 42LE5500 Interconnect

Panel P/N:

Mainboard P/N: EBU60904603



42LE5500 Mainboard (Front Side)

IC9100

Pin	P-GAMMA Chip
[1]	3.3V
[2]	0V (Gnd)
[3]	3.3V (In)
[4]	0V (Gnd)
[5]	6.8V
[6]	6.8V
[7]	15.3V
[8]	15.3V
[9]	n/c
[10]	13.47V
[11]	12.75V
[12]	11.8V
[13]	10V
[14]	5.96V
[15]	4.06V
[16]	15.3V
[17]	0V
[18]	2.96V
[19]	2.33V
[20]	3.3V (In)

IC9102

Pin	DC to DC HVDD T-CON
[1]	0V (Gnd)
[2]	11.72V (In)
[3]	11.72V (In)
[4]	3.25V
[5]	3.2V
[6]	0V
[7]	0V
[8]	11.7V
[9]	0V (Gnd)
[10]	1.13V
[11]	0V (Gnd)
[12]	0V (Gnd)
[13]	0V (Gnd)
[14]	7.7V
[15]	7.7V (HVDD)
[16]	0V (Gnd)

Q8003

Pin	PANEL_VCC Control 2nd Driver
B	0.679V
C	0V
E	Gnd

Q8001

Pin	PANEL_VCC Control 1st Driver
B	0V
C	0.68V
E	Gnd

Q8004

Pin	PANEL_VCC Switch
S	11.8V (In)
G	1.8V (Enable)
D	11.8V (Out)

D9101

Pin	VGH/VDD Rectifyer
A	15.4V
AC	22.2V
C	27.4V (VGH)

D9101

Pin	VGH/VDD Rectifyer
A	15.4V
AC	22.2V
C	27.4V (VGH)

D9102

Pin	VGL/VCC Rectifyer
A	(-5V VGL)
AC	(-1.9V)
C	0V

D9102

Pin	VGL/VCC Rectifyer
A	(-5V VGL)
AC	(-1.9V)
C	0V

42LE5500 Mainboard (Back Side)

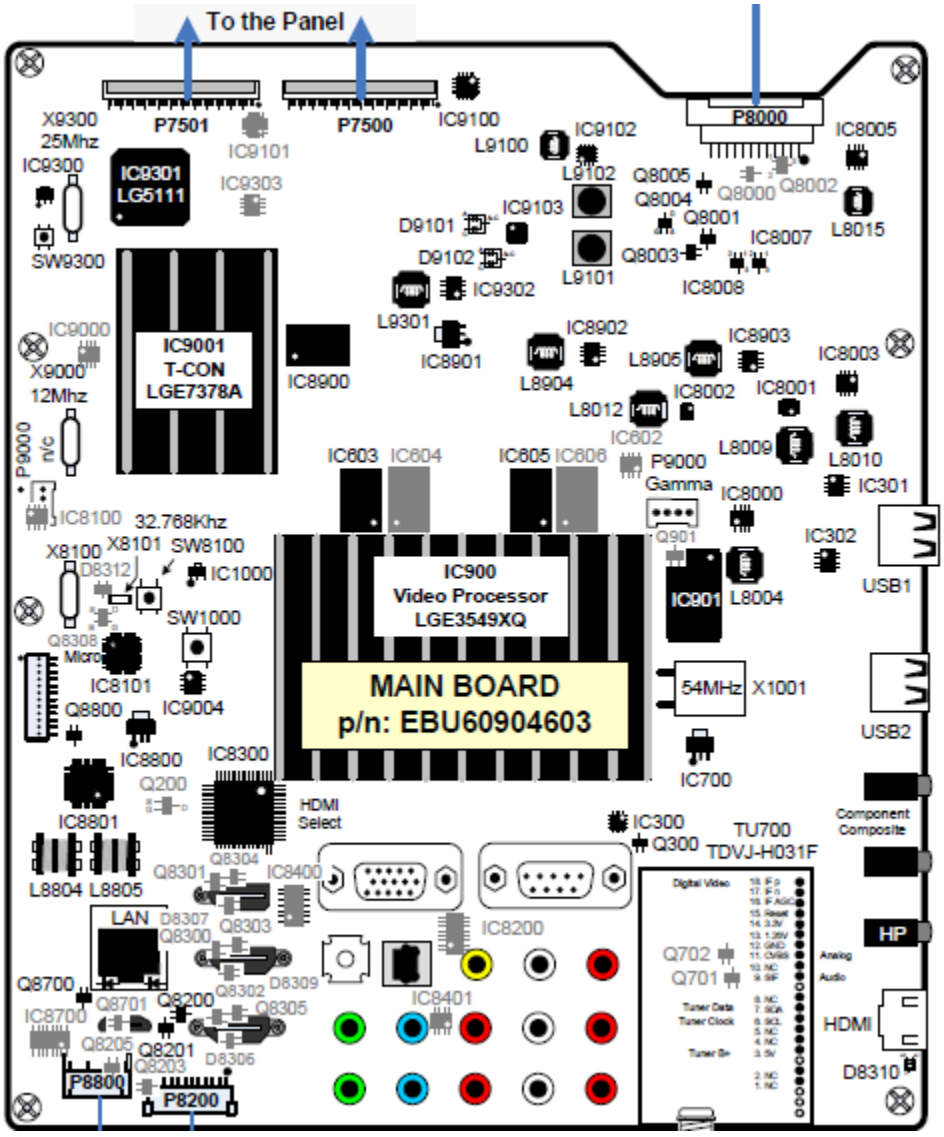
IC9000

Pin	Serial Flash T-CON
[1]	0.06V
[2]	0.67V
[3]	3.3V (In)
[4]	0V (Gnd)
[5]	0V
[6]	0.34V
[7]	3.31V (In)
[8]	3.34V (In)

2) 47LE5500 Interconnect

Panel P/N:

Mainboard P/N: EBU60904603



47LE5500 Mainboard (Front Side)

IC9100

Pin	P-GAMMA Chip
[1]	3.3V
[2]	0V (Gnd)
[3]	3.3V (In)
[4]	0V (Gnd)
[5]	6.8V
[6]	6.8V
[7]	15.3V
[8]	15.3V
[9]	n/c
[10]	13.47V
[11]	12.75V
[12]	11.8V
[13]	10V
[14]	5.96V
[15]	4.06V
[16]	15.3V
[17]	0V
[18]	2.96V
[19]	2.33V
[20]	3.3V (In)

IC9102

Pin	DC to DC HVDD T-CON
[1]	0V (Gnd)
[2]	11.72V (In)
[3]	11.72V (In)
[4]	3.25V
[5]	3.2V
[6]	0V
[7]	0V
[8]	11.7V
[9]	0V (Gnd)
[10]	1.13V
[11]	0V (Gnd)
[12]	0V (Gnd)
[13]	0V (Gnd)
[14]	7.7V
[15]	7.7V (HVDD)
[16]	0V (Gnd)

Q8003

Pin	PANEL_VCC Control 2nd Driver
B	0.679V
C	0V
E	Gnd

Q8001

Pin	PANEL_VCC Control 1st Driver
B	0V
C	0.68V
E	Gnd

Q8004

Pin	PANEL_VCC Switch
S	11.8V (In)
G	1.8V (Enable)
D	11.8V (Out)

D9101

Pin	VGH/VDD Rectifyer
A	15.4V
AC	22.2V
C	27.4V (VGH)

D9101

Pin	VGH/VDD Rectifyer
A	15.4V
AC	22.2V
C	27.4V (VGH)

D9102

Pin	VGL/VCC Rectifyer
A	(-5V VGL)
AC	(-1.9V)
C	0V

D9102

Pin	VGL/VCC Rectifyer
A	(-5V VGL)
AC	(-1.9V)
C	0V

47LE5500 Mainboard (Back Side)

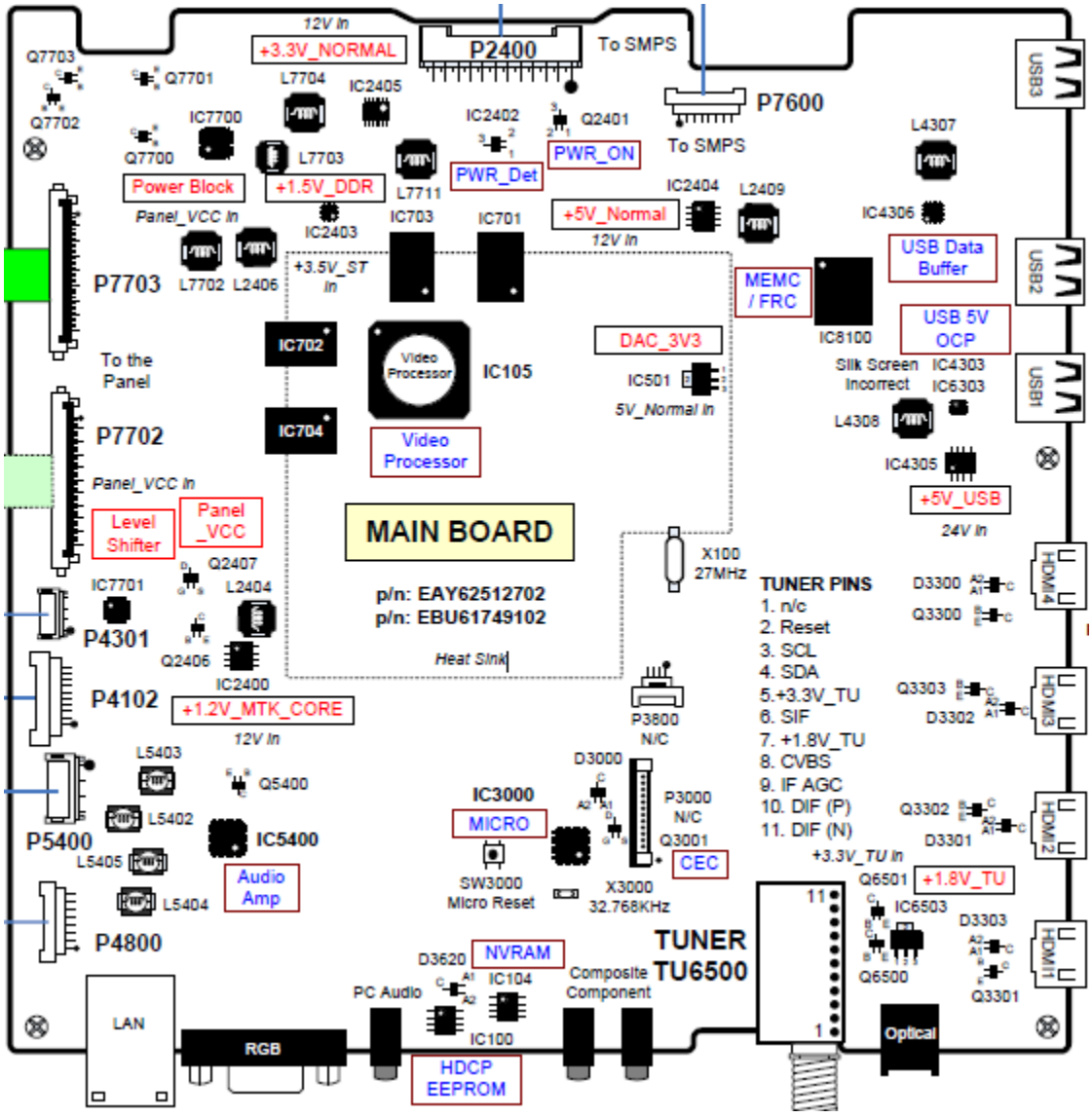
IC9000

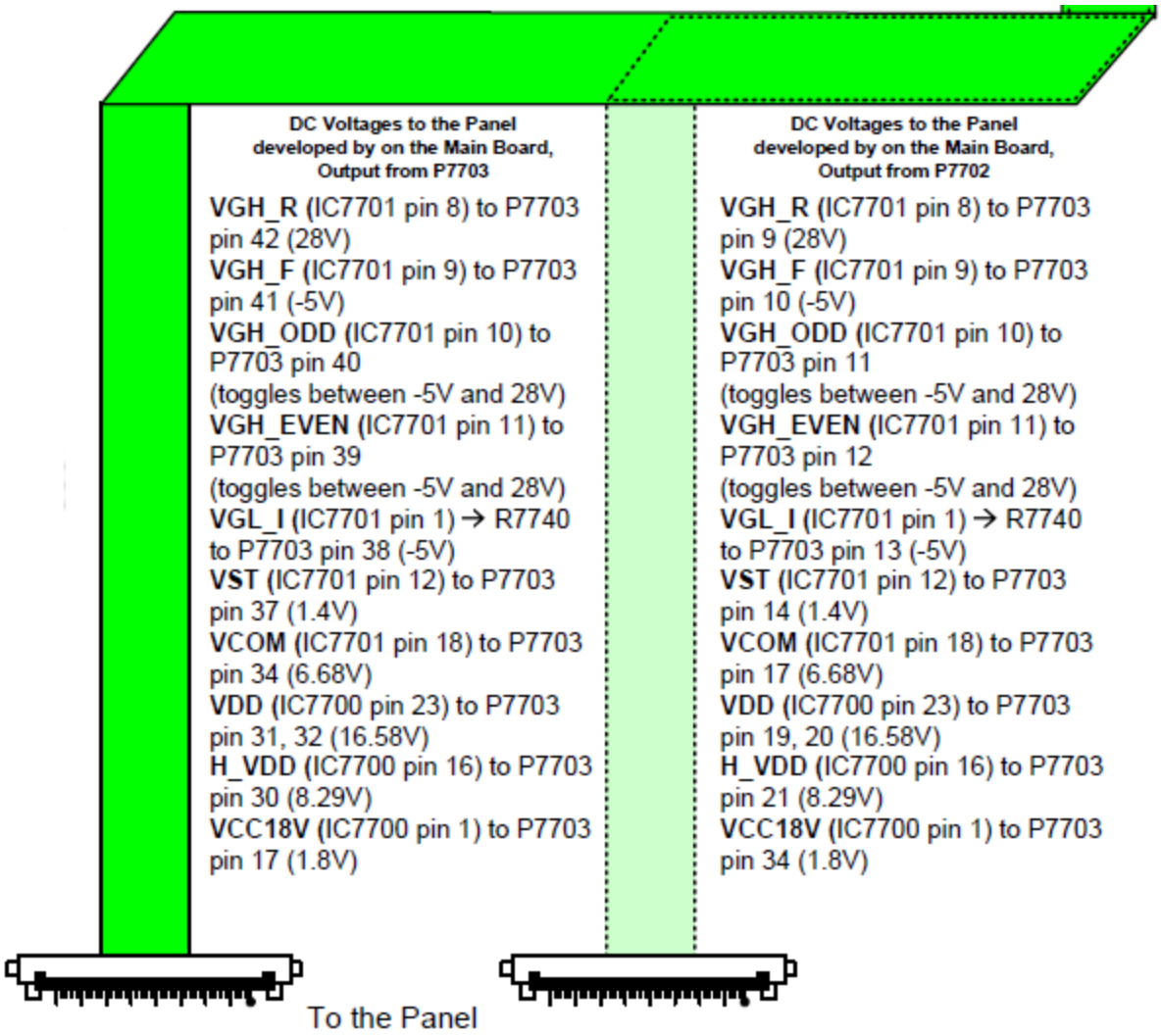
Pin	Serial Flash T-CON
[1]	0.06V
[2]	0.67V
[3]	3.3V (In)
[4]	0V (Gnd)
[5]	0V
[6]	0.34V
[7]	3.31V (In)
[8]	3.34V (In)

3) 47LM7600 Interconnect

Panel P/N: EAJ62128701

Mainboard P/N: EAY62512702, EBU61749102




DC Voltages to the Panel developed by on the Main Board, Output from P7703
VGH_R (IC7701 pin 8) to P7703 pin 42 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 41 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 40 (toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 39 (toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 38 (-5V)
VST (IC7701 pin 12) to P7703 pin 37 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 34 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 31, 32 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 30 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 17 (1.8V)
DC Voltages to the Panel developed by on the Main Board, Output from P7702
VGH_R (IC7701 pin 8) to P7703 pin 9 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 10 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 11 (toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 12 (toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 13 (-5V)
VST (IC7701 pin 12) to P7703 pin 14 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 17 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 19, 20 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 21 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 34 (1.8V)
To the Panel

Video (TXA) pins 19, 20, 27, 28
Video Clock (TXACLK) 23, 24

Video (TXB) pins 23, 24, 27, 28, 31, 32

Video Signal Level: p/p: Approx: 500mV

P7703

VGH_R (IC7701 pin 8) to P7703 pin 42 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 41 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 40
(toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 39
(toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 38 (-5V)
VST (IC7701 pin 12) to P7703 pin 37 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 34 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 31, 32 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 30 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 17 (1.8V)

P7702

VGH_R (IC7701 pin 8) to P7703 pin 9 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 10 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 11
(toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 12
(toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 13 (-5V)
VST (IC7701 pin 12) to P7703 pin 14 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 17 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 19, 20 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 21 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 34 (1.8V)

Q2407 activated by the Microprocessor pin 4 output of Panel_CTL (Low) to Gate of Q2407 Generating Panel_VCC turning on DC-to-DC converters for the T-CON section and the Panel.

Q2406

Pin	Panel_VCC Driver
[B]	0.64V
[C]	0.1V
[E]	Gnd

Q2407

Pin	Panel_VCC Switch
[G]	1.9V
[S]	11.92V
[D]	11.92V

Q7700

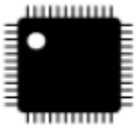
Pin	VGL_FB / VGL Switch
[B]	0.67V
[C]	4.67V
[E]	0V

Q7701

Pin	VGH / VGH_FB Switch
[B]	15.91V
[C]	15.63V
[E]	16.6V

IC7701

Pin	Panle Power Level Shifter	Pin
[1]	8.33V	[15] (-5V)
[2]	8.33V	[16] 28V
[3]	8.33V	[17] 28V
[4]	8.33V	[18] 6.7V
[5]	8.33V	[19] 6.7V
[6]	8.33V	[20] 6.7V
[7]	6.21V	[21] 16.58V
[8]	27.9V	[22] Gnd
[9]	(-5V)	[23] 3.29V
[10]	27.5V to -5V	[24] 0V
[11]	27.5V to -5V	[25] 0V
[12]	(-5V)	[26] 0.07V
[13]	(-5V)	[27] 1.36V
[14]	(-4.9V)	[28] 3.37V



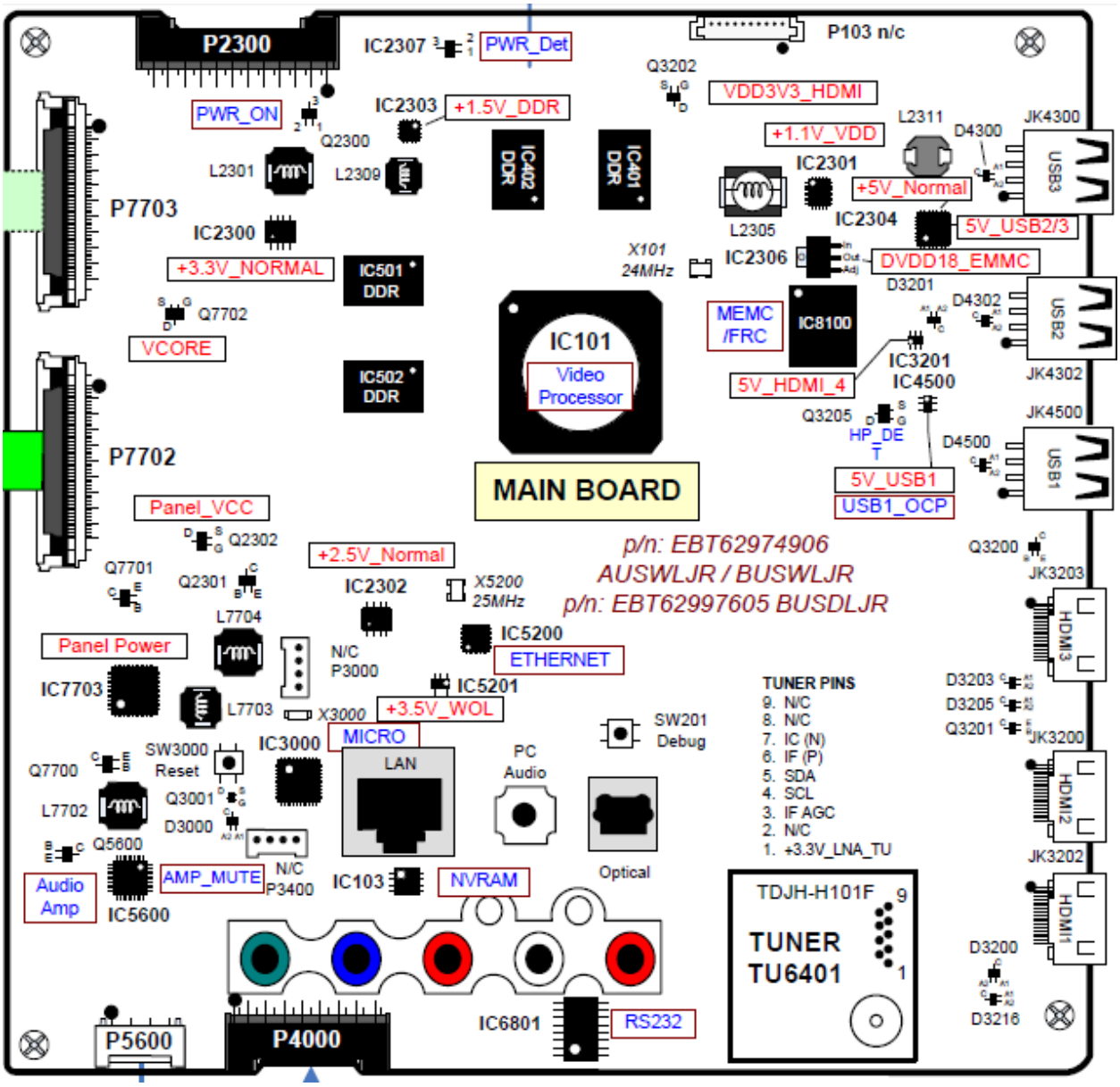
IC7700

Pin	Panel Power DC-to-DC Conv	Pin
[1]	1.89V	[25] 4.95V
[2]	1.89V	[26] 0.52V
[3]	3.4V	[27] 3.31V
[4]	3.4V	[28] 3.31V
[5]	1.2V	[29] 5V
[6]	1.2V	[30] 1.27V
[7]	Gnd	[31] 1.59V
[8]	3.4V	[32] 2.8V
[9]	3.4V	[33] 8.12V
[10]	0V	[34] 8.12V
[11]	11.75V	[35] (-5V)
[12]	11.75V	[36] 0.67V
[13]	11.76V	[37] 13.56V
[14]	11.75V	[38] 12.38V
[15]	8.29V	[39] 10.42V
[16]	8.29V	[40] 5.97V
[17]	Gnd	[41] 5.95V
[18]	Gnd	[42] 2.85V
[19]	Gnd	[43] 6.7V
[20]	11.71V	[44] 6.7V
[21]	11.7V	[45] 6.69V
[22]	14.84V	[46] 6.69V
[23]	10.6V	[47] Gnd
[24]	Gnd	[48] Gnd

4) 50LB6500 Interconnect

Panel P/N: EAJ62548101, EAJ62630101

Mainboard P/N: EBT62974906, EBT62997605

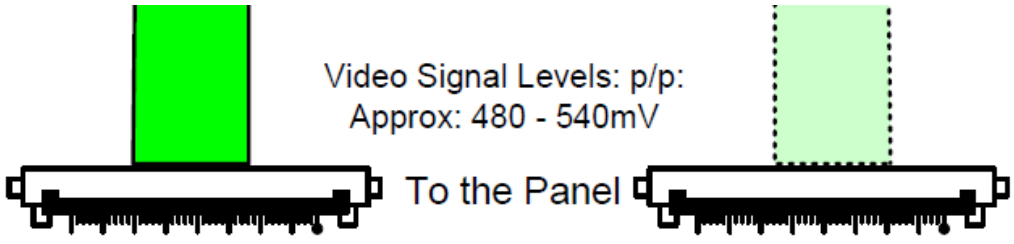


DC Voltages to the Panel developed by on the Main Board, Output from P7702 and P7703

P7702 P7703 "MAIN Board" To "The Panel"

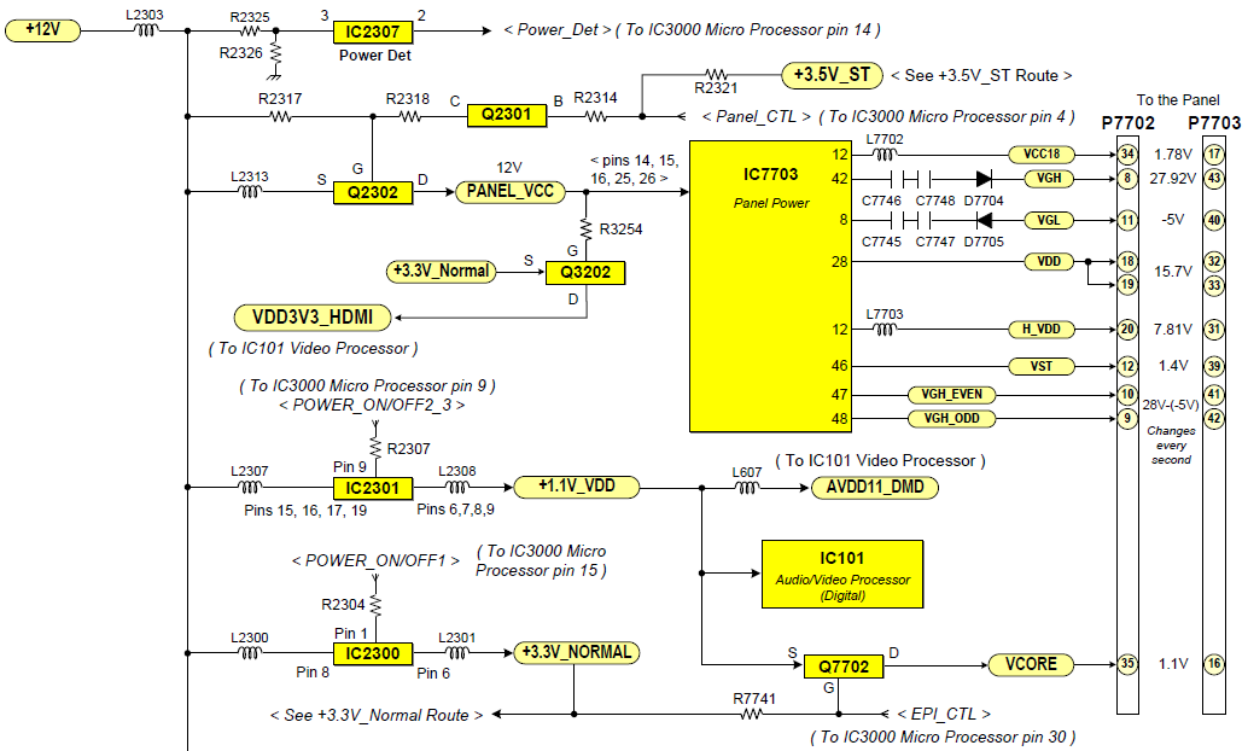
Pin	Pin	Label	Voltage	Source
35	16	Vcore	1.1V	Q7702 Drain
34	17	VCC18	1.78V	IC7703 pin 18
20	31	H_VDD	7.81V	IC7703 pin 17
19	32	VDD	15.7V	IC7703 pin 28
18	33	VDD	15.7V	IC7703 pin 28
13	38	GIP_RST	(-4.86V)	IC7703 pin 45
12	39	VST	1.4V	IC7703 pin 46
11	40	VGL	(-5V)	IC7703 pin 7
10	41	VGH_EVEN	*28V - (-5V)	IC7703 pin 47
9	42	VGH_ODD	*28V - (-5V)	IC7703 pin 48
8	43	VGH	27.92V	Cathode D7704
1	50	Z-OUT	0V	P7702 pin 1

*Toggles every second



Video (TXB) pins 22, 23, 28, 29, 31, 32
Video Clock (TXBCLK) 25, 26

Video (TXD) pins 19, 20, 25, 26, 28, 29
Video Clock (TXDCLK) 22, 23



Q2302

Pin	Panel_VCC Switch
[G]	1.8V
[S]	12.03V
[D]	12.00V

Q7702

Pin	VCORE Switch
[S]	1.11V (In)
[G]	3.47V (Enable)
[D]	1.11V (Out)

Q7700

Pin	VGL Control
[B]	0V
[C]	5V
[E]	0V

Q7701

Pin	VGH Control
[B]	15V
[C]	15.70V
[E]	14.14V

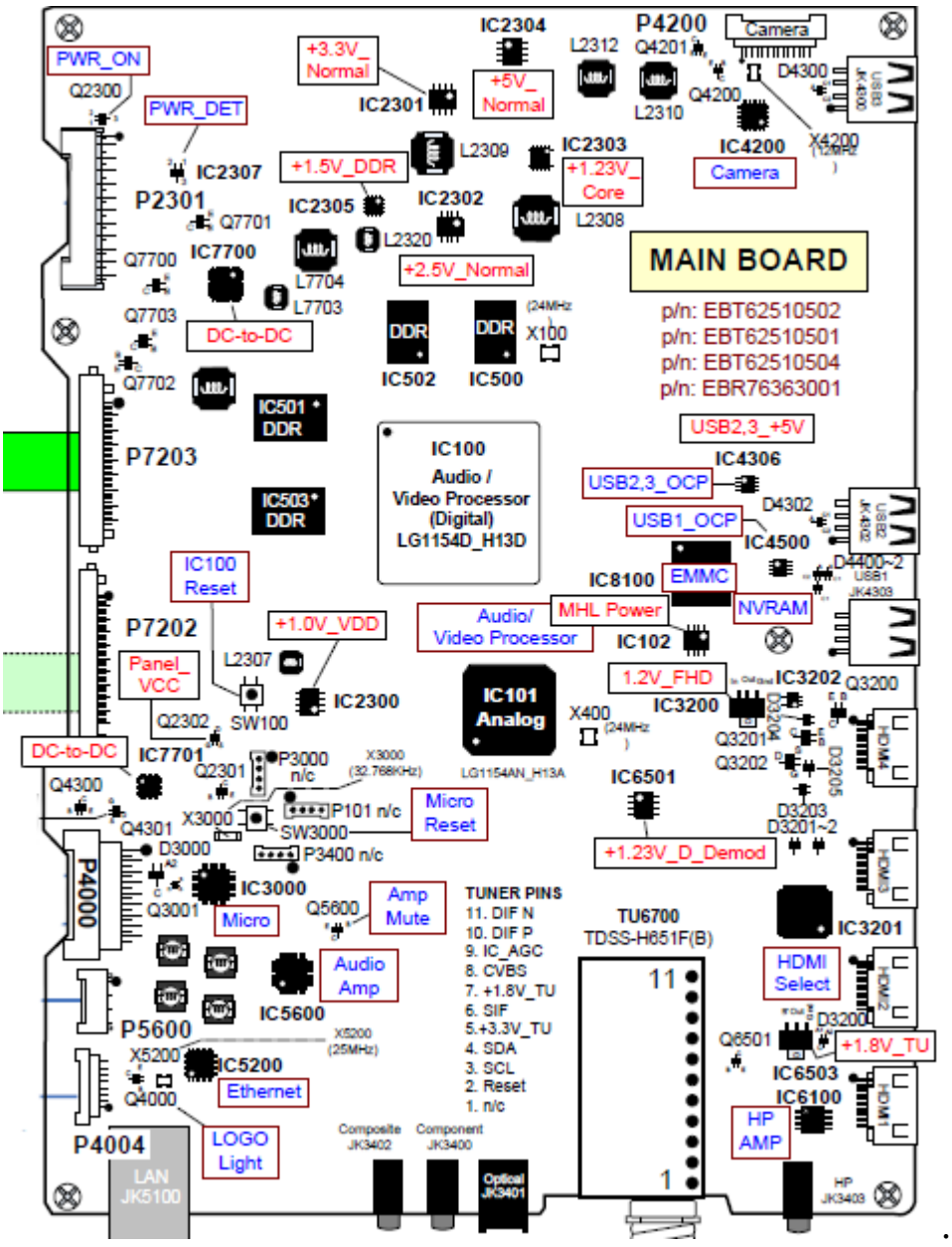
IC7703 Panel Power DC-to-DC Conv

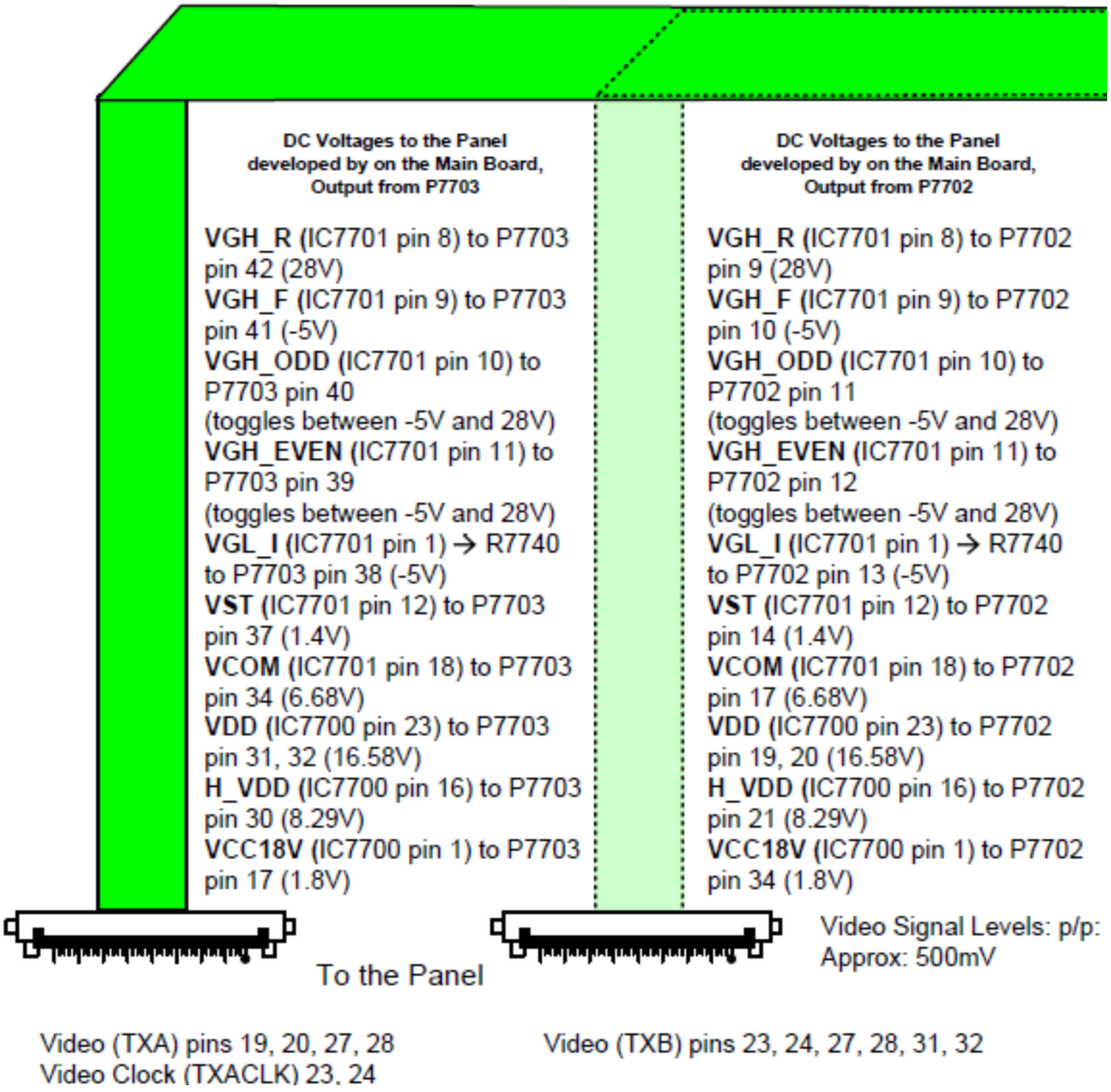
Pin		Pin	
[1]	3.79V	[29]	4.93V
[2]	1.67V	[30]	0.47V
[3]	0.07V	[31]	14.86V
[4]	0.02V	[32]	11.73V
[5]	0V	[33]	8.14V
[6]	Gnd	[34]	7.29V
[7]	(-5.07V) VGL Out	[35]	3.97V
[8]	5.89V	[36]	0.81V
[9]	0.68V	[37]	Gnd
[10]	1.81V	[38]	6.73V
[11]	1.81V (VCC18 In)	[39]	6.73V
[12]	1.81V (VCC18 Out)	[40]	6.69V
[13]	Gnd	[41]	15.0V
[14]	12.03V (Vcc In)	[42]	7.69V
[15]	12.03V (Vcc In)	[43]	27.89V (VGH Ou
[16]	12.03V (Vcc In)	[44]	27.89V (VGH Ou
[17]	7.81V (HVDD Out)	[45]	(-4.95V)
[18]	7.81V	[46]	(-5.03V)
[19]	Gnd	[47]	(-5.06V) VGH_E
[20]	3.32V	[48]	27.86V (VGH_O
[21]	3.32V	[49]	n/c
[22]	4.98V (VL Out)	[50]	0.81V (CLK6)
[23]	1.31V	[51]	0V (CLK5)
[24]	Gnd	[52]	2.98V (CLK4)
[25]	12.03V (Vcc In)	[53]	3.97V (CLK3)
[26]	12.03V (Vcc In)	[54]	5.68V (CLK2)
[27]	15.73V	[55]	7.28V (CLK1)
[28]	15.70V (VDD Out)	[56]	6.08V

5) 55LA8600 Interconnect

Panel P/N: EAJ62270501

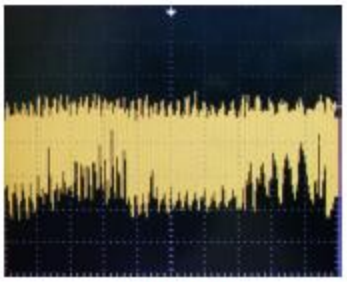
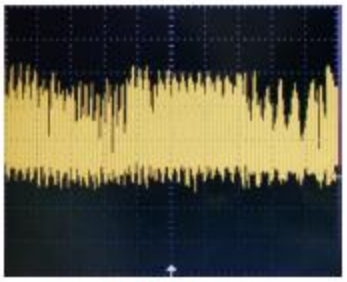
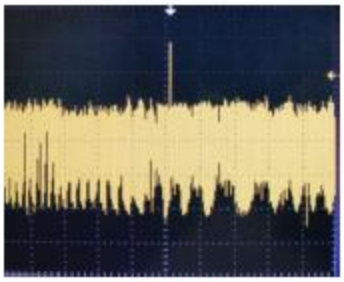
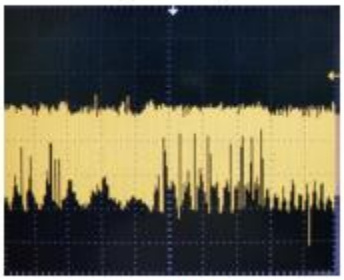
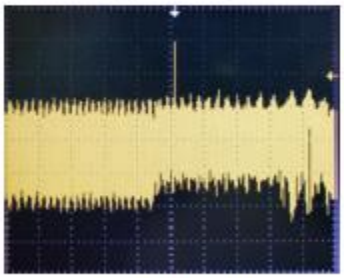
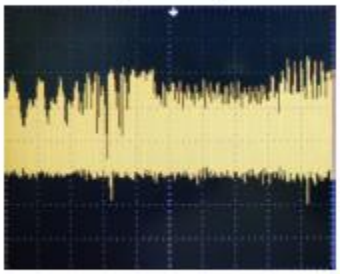
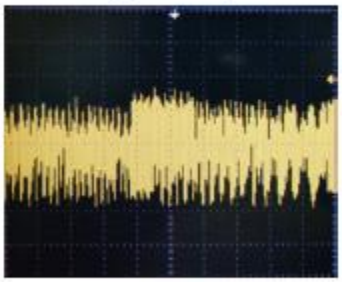
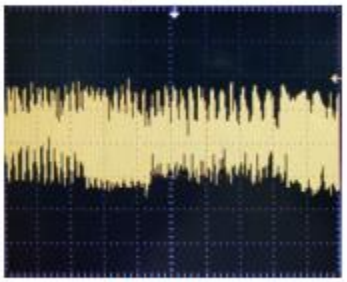
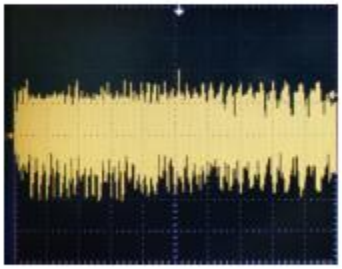
Mainboard P/N: EBT62510502, EBT62510501, EBT62510504, EBR76363001

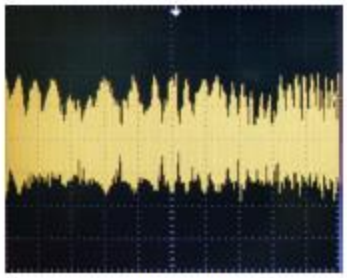
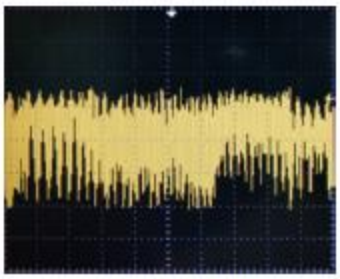
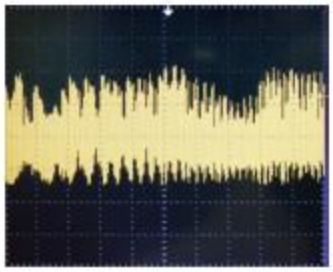


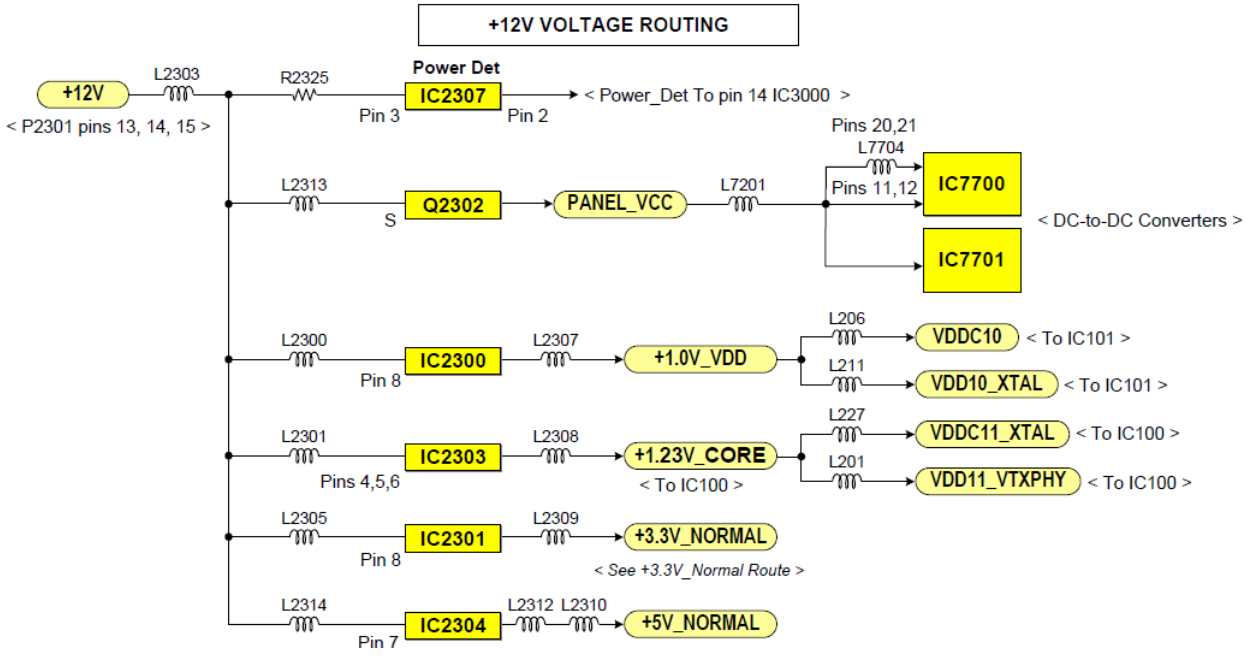

DC Voltages to the Panel developed by on the Main Board, Output from P7703
VGH_R (IC7701 pin 8) to P7703 pin 42 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 41 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 40 (toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 39 (toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 38 (-5V)
VST (IC7701 pin 12) to P7703 pin 37 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 34 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 31, 32 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 30 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 17 (1.8V)
DC Voltages to the Panel developed by on the Main Board, Output from P7702
VGH_R (IC7701 pin 8) to P7702 pin 9 (28V)
VGH_F (IC7701 pin 9) to P7702 pin 10 (-5V)
VGH_ODD (IC7701 pin 10) to P7702 pin 11 (toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7702 pin 12 (toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7702 pin 13 (-5V)
VST (IC7701 pin 12) to P7702 pin 14 (1.4V)
VCOM (IC7701 pin 18) to P7702 pin 17 (6.68V)
VDD (IC7700 pin 23) to P7702 pin 19, 20 (16.58V)
H_VDD (IC7700 pin 16) to P7702 pin 21 (8.29V)
VCC18V (IC7700 pin 1) to P7702 pin 34 (1.8V)
Video Signal Levels: p/p: Approx: 500mV
To the Panel
Video (TXA) pins 19, 20, 27, 28
Video Clock (TXACLK) 23, 24
Video (TXB) pins 23, 24, 27, 28, 31, 32

LG 55LA8600 LVDS P7702 and P7703 Video Waveforms

SMTPE Color Bar input signal (Component). All signals taken at 2.5uSec per/sec/ 100mV per/div.

LVDS P7702 Pin 23 (TXB0N)  380mV p/p	LVDS P7702 Pin 24 (TXB0P)  440mV p/p	LVDS P7702 Pin 27 (TXB1N)  532mV p/p
LVDS P7702 Pin 28 (TXB1P)  444mV p/p	LVDS P7702 Pin 31 (TXB2N)  536mV p/p	LVDS P7702 Pin 32 (TXB2P)  448mV p/p
LVDS P7703 Pin 19 (TXA1N)  352mV p/p	LVDS P7703 Pin 20 (TXA1P)  348mV p/p	LVDS P7703 Pin 23 (TXACLKN)  404mV p/p

LVDS P7703 Pin 24 (TXACLKP)	LVDS P7703 Pin 27 (TXA4N)	LVDS P7703 Pin 28 (TXA4P)
		
380mV p/p	368mV p/p	360mV p/p



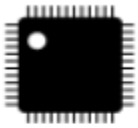
Q2301

Pin	Panel_VCC CTRL Drives Q2302
[B]	0.63V
[C]	0.08V
[E]	Gnd

Q2302

Pin	Panel_VCC Switch
[G]	1.78V
[S]	11.98V
[D]	11.94V

IC7701



Pin	Panle Power Level Shifter	Pin	
[1]	8.33V	[15]	(-5V)
[2]	8.33V	[16]	28V
[3]	8.33V	[17]	28V
[4]	8.33V	[18]	6.7V
[5]	8.33V	[19]	6.7V
[6]	8.33V	[20]	6.7V
[7]	6.21V	[21]	16.58V
[8]	27.9V	[22]	Gnd
[9]	(-5V)	[23]	3.29V
[10]	*27.5V to -5V	[24]	0V
[11]	*27.5V to -5V	[25]	0V
[12]	(-5V)	[26]	0.07V
[13]	(-5V)	[27]	1.36V
[14]	(-4.9V)	[28]	3.37V

*Changes once a second

IC7700

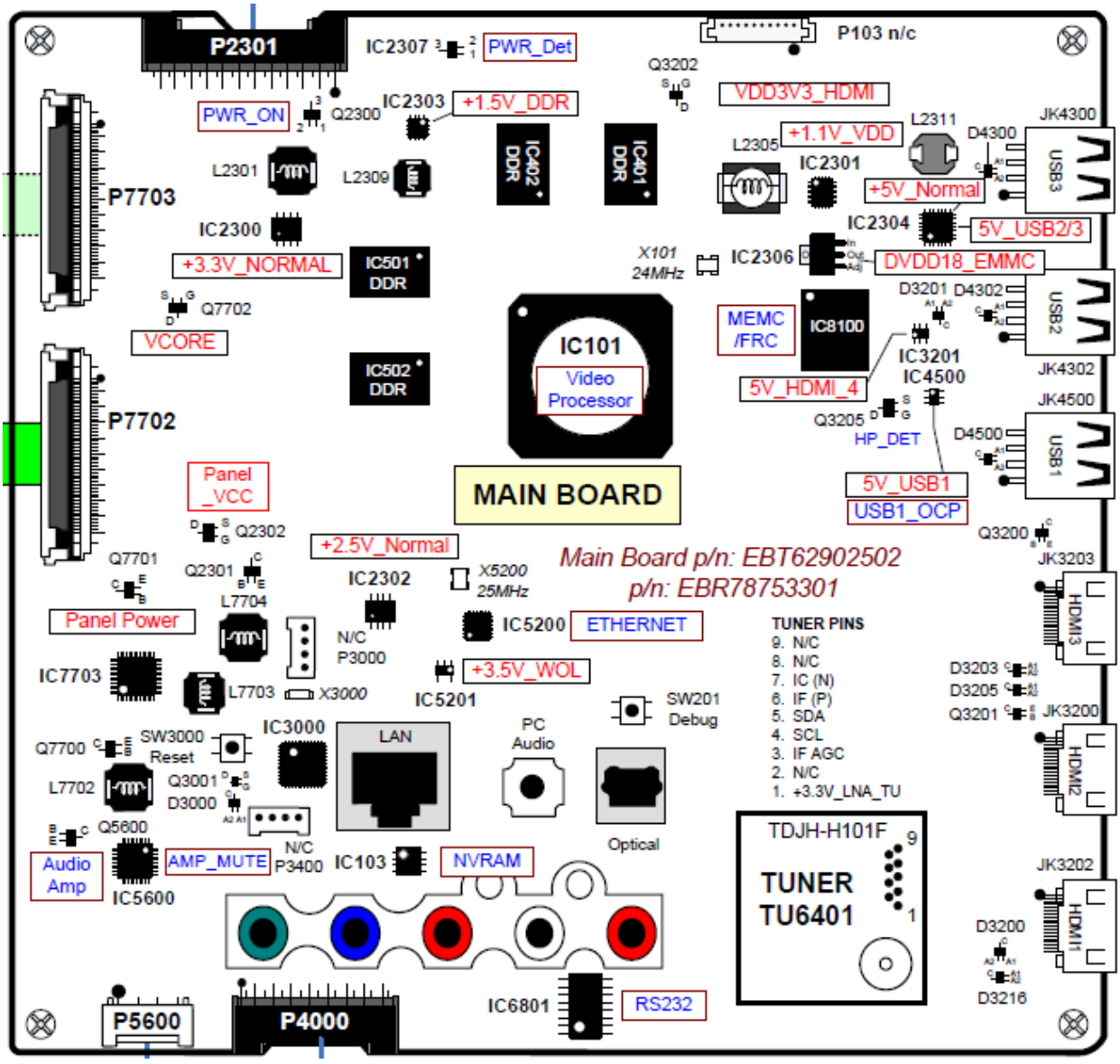
Panel Power DC-to-DC Conv

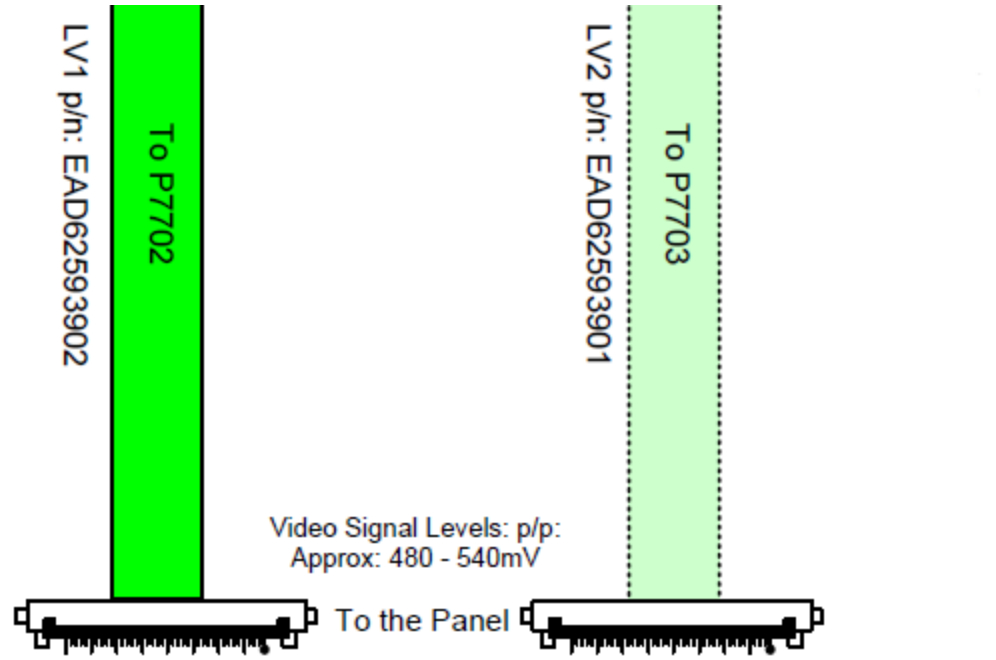
Pin		Pin	
[1]	1.89V	[25]	4.95V
[2]	1.89V	[26]	0.52V
[3]	3.4V	[27]	3.31V
[4]	3.4V	[28]	3.31V
[5]	1.2V	[29]	5V
[6]	1.2V	[30]	1.27V
[7]	Gnd	[31]	1.59V
[8]	3.4V	[32]	2.8V
[9]	3.4V	[33]	8.12V
[10]	0V	[34]	8.12V
[11]	11.75V	[35]	(-5V)
[12]	11.75V	[36]	0.67V
[13]	11.76V	[37]	13.56V
[14]	11.75V	[38]	12.38V
[15]	8.29V	[39]	10.42V
[16]	8.29V	[40]	5.97V
[17]	Gnd	[41]	5.95V
[18]	Gnd	[42]	2.85V
[19]	Gnd	[43]	6.7V
[20]	11.71V	[44]	6.7V
[21]	11.7V	[45]	6.69V
[22]	14.84V	[46]	6.69V
[23]	16V	[47]	Gnd
[24]	Gnd	[48]	Gnd

6) 55LB7200 Interconnect

Panel P/N: EAJ62270501

Mainboard P/N: EBT62902502, EBR78753301




LV1 p/n: EAD62593902
To P7702
LV2 p/n: EAD62593901
To P7703
Video Signal Levels: p/p:
Approx: 480 - 540mV
To the Panel
Video (TXB) pins 22, 23, 28, 29, 31, 32
Video Clock (TXBCLK) 25, 26
Video (TXD) pins 19, 20, 25, 26, 28, 29
Video Clock (TXDCLK) 22, 23

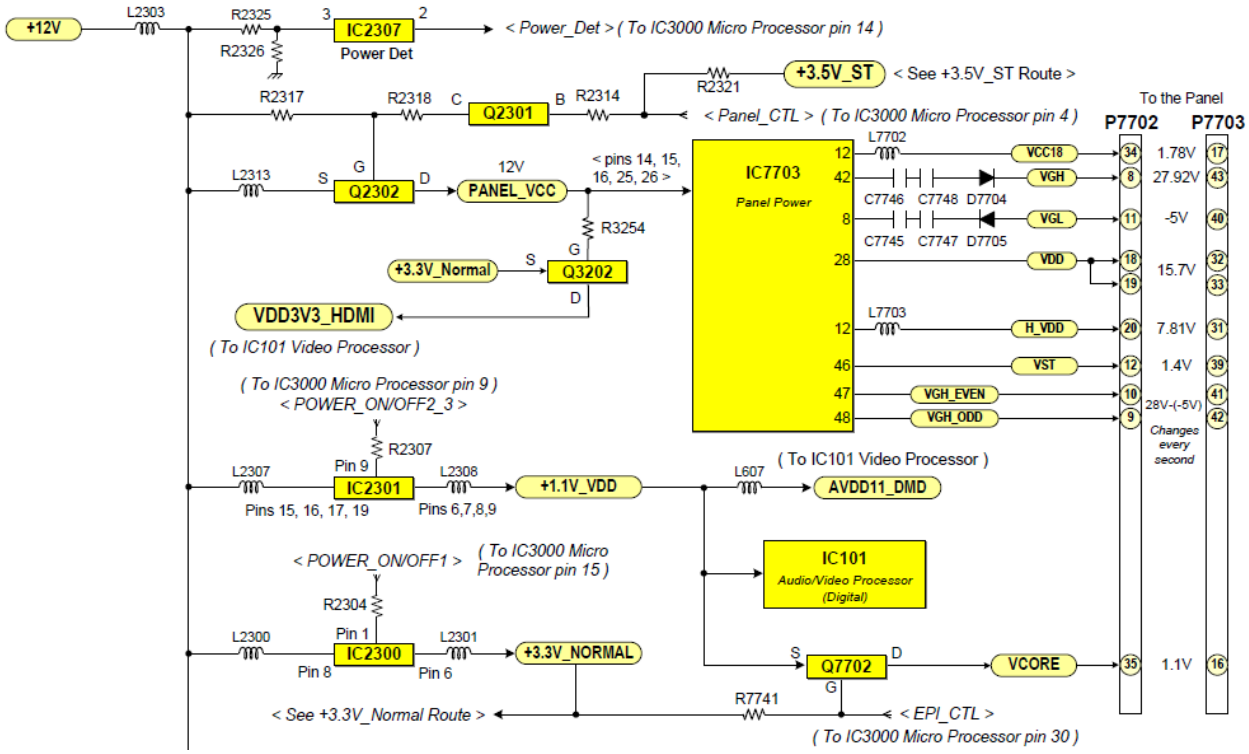
DC Voltages to the Panel developed by on the Main Board, Output from P7702 and P7703

P7702 P7703 "MAIN Board" To "The Panel"

Pin	Pin	Label	Voltage	Source
35	16	Vcore	1.1V	Q7702 Drain
34	17	VCC18	1.78V	IC7703 pin 18
20	31	H_VDD	7.81V	IC7703 pin 17
19	32	VDD	15.7V	IC7703 pin 28
18	33	VDD	15.7V	IC7703 pin 28
13	38	GIP_RST	(-4.86V)	IC7703 pin 45
12	39	VST	1.4V	IC7703 pin 46
11	40	VGL	(-5V)	IC7703 pin 7
10	41	VGH_EVEN	*28V - (-5V)	IC7703 pin 47
9	42	VGH_ODD	*28V - (-5V)	IC7703 pin 48
8	43	VGH	27.92V	Cathode D7704
1	50	Z-OUT	0V	P7702 pin 1

*Toggles every second

LG 55LB7200 Mainboardd (+12V) Voltage Rating



Q2301

Pin	Q2302 Control
[B]	0.62V
[C]	0.07V
[E]	Gnd

Q2302

Pin	Panel_VCC Switch
[G]	1.8V
[S]	12.03V
[D]	12.00V

Q7700

Pin	VGL Control
[B]	0V
[C]	5V
[E]	0V

Q7701

Pin	VGH Control
[B]	15V
[C]	15.70V
[E]	14.14V

Q7702

Pin	VCORE Switch
[S]	1.11V (In)
[G]	3.47V (Enable)
[D]	1.11V (Out)

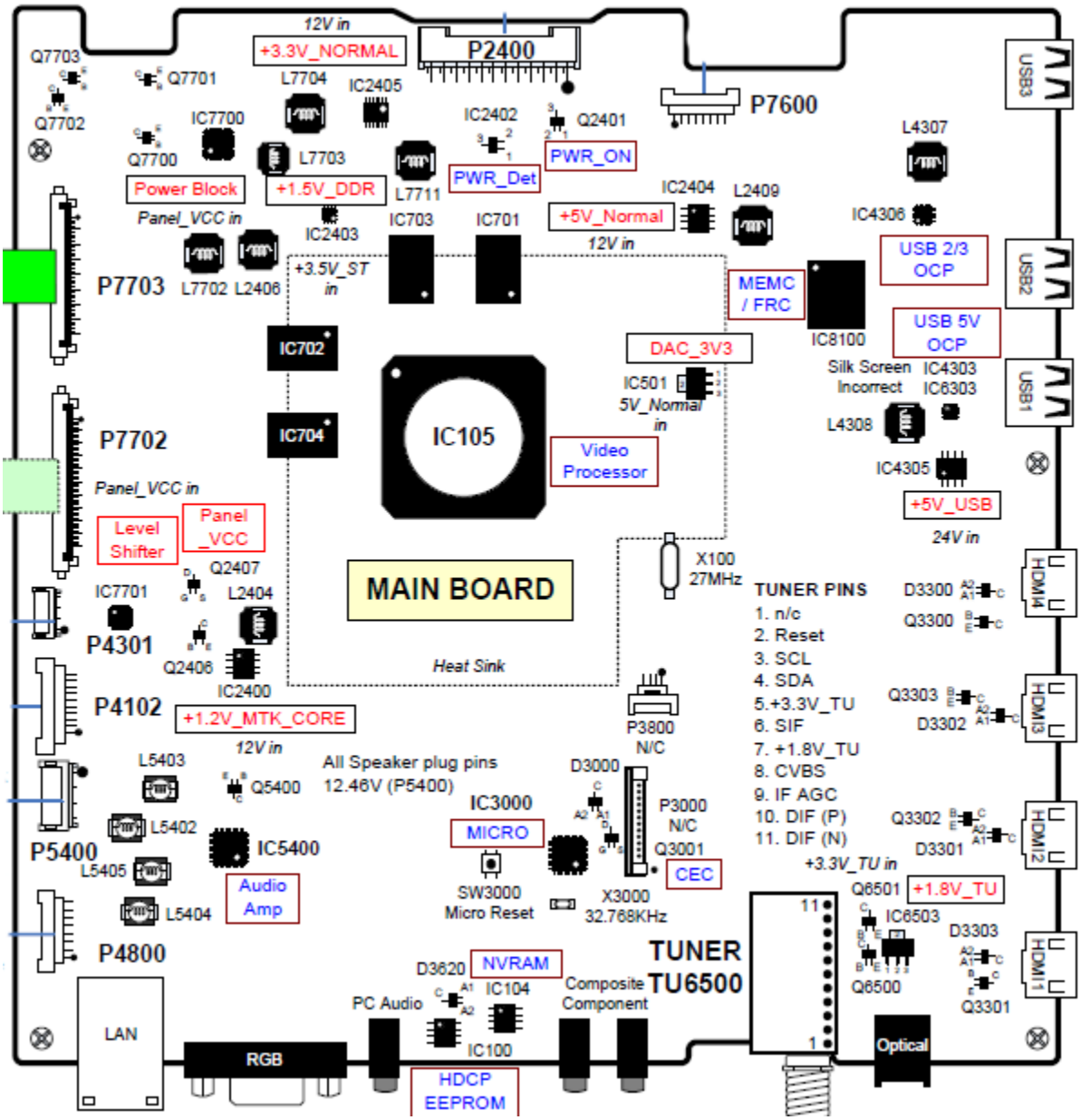
IC7703 Panel Power DC-to-DC Conv

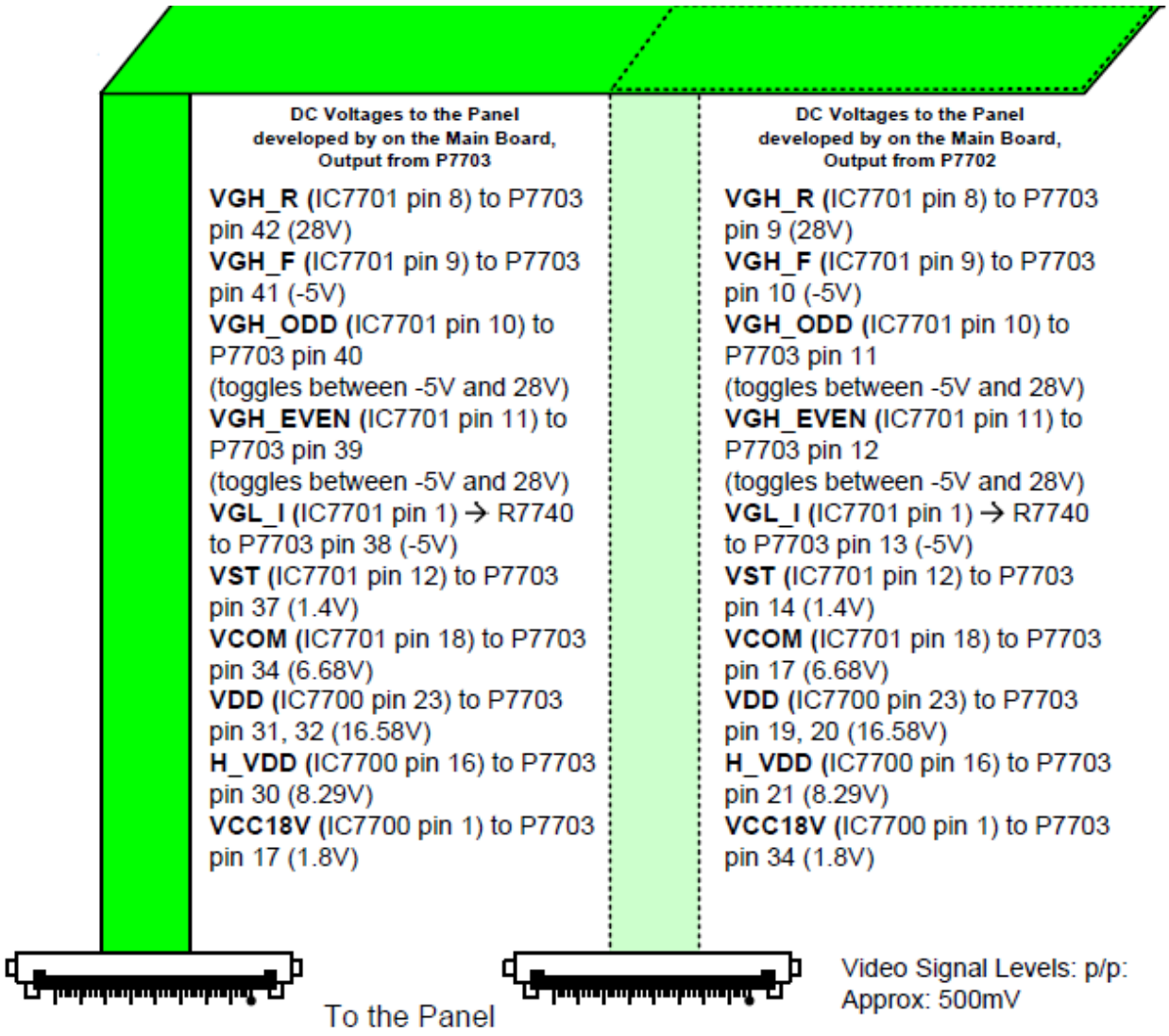
Pin		Pin	
[1]	3.79V	[29]	4.93V
[2]	1.67V	[30]	0.47V
[3]	0.07V	[31]	14.86V
[4]	0.02V	[32]	11.73V
[5]	0V	[33]	8.14V
[6]	Gnd	[34]	7.29V
[7]	(-5.07V) VGL Out	[35]	3.97V
[8]	5.89V	[36]	0.81V
[9]	0.68V	[37]	Gnd
[10]	1.81V	[38]	6.73V
[11]	1.81V (VCC18 In)	[39]	6.73V
[12]	1.81V (VCC18 Out)	[40]	6.69V
[13]	Gnd	[41]	15.0V
[14]	12.03V (Vcc In)	[42]	7.69V
[15]	12.03V (Vcc In)	[43]	27.89V (VGH Ou
[16]	12.03V (Vcc In)	[44]	27.89V (VGH Ou
[17]	7.81V (HVDD Out)	[45]	(-4.95V)
[18]	7.81V	[46]	(-5.03V)
[19]	Gnd	[47]	(-5.06V) VGH_E
[20]	3.32V	[48]	27.86V (VGH_O
[21]	3.32V	[49]	n/c
[22]	4.98V (VL Out)	[50]	0.81V (CLK6)
[23]	1.31V	[51]	0V (CLK5)
[24]	Gnd	[52]	2.98V (CLK4)
[25]	12.03V (Vcc In)	[53]	3.97V (CLK3)
[26]	12.03V (Vcc In)	[54]	5.68V (CLK2)
[27]	15.73V	[55]	7.28V (CLK1)
[28]	15.70V (VDD Out)	[56]	6.08V

7) 55LM6700 Interconnect

Panel P/N: AFB73410002, EAJ62109301, EAJ62114401

Mainboard P/N: EAY62512702, EBU61749102




DC Voltages to the Panel developed by on the Main Board, Output from P7703
VGH_R (IC7701 pin 8) to P7703 pin 42 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 41 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 40 (toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 39 (toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 38 (-5V)
VST (IC7701 pin 12) to P7703 pin 37 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 34 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 31, 32 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 30 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 17 (1.8V)
DC Voltages to the Panel developed by on the Main Board, Output from P7702
VGH_R (IC7701 pin 8) to P7703 pin 9 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 10 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 11 (toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 12 (toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 13 (-5V)
VST (IC7701 pin 12) to P7703 pin 14 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 17 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 19, 20 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 21 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 34 (1.8V)
To the Panel
Video Signal Levels: p/p: Approx: 500mV

Video (TXA) pins 19, 20, 27, 28
Video Clock (TXACLK) 23, 24

Video (TXB) pins 23, 24, 27, 28, 31, 32

P7703

VGH_R (IC7701 pin 8) to P7703 pin 42 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 41 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 40
(toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 39
(toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 38 (-5V)
VST (IC7701 pin 12) to P7703 pin 37 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 34 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 31, 32 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 30 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 17 (1.8V)

P7702

VGH_R (IC7701 pin 8) to P7703 pin 9 (28V)
VGH_F (IC7701 pin 9) to P7703 pin 10 (-5V)
VGH_ODD (IC7701 pin 10) to P7703 pin 11
(toggles between -5V and 28V)
VGH_EVEN (IC7701 pin 11) to P7703 pin 12
(toggles between -5V and 28V)
VGL_I (IC7701 pin 1) → R7740 to P7703 pin 13 (-5V)
VST (IC7701 pin 12) to P7703 pin 14 (1.4V)
VCOM (IC7701 pin 18) to P7703 pin 17 (6.68V)
VDD (IC7700 pin 23) to P7703 pin 19, 20 (16.58V)
H_VDD (IC7700 pin 16) to P7703 pin 21 (8.29V)
VCC18V (IC7700 pin 1) to P7703 pin 34 (1.8V)

Q2407 activated by the Microprocessor pin 4 output of Panel_CTL (Low) to Gate of Q2407 Generating Panel_VCC turning on DC-to-DC converters for the T-CON section and the Panel.

Q2406

Pin	Panel_VCC Driver
[B]	0.64V
[C]	0.1V
[E]	Gnd

Q2407

Pin	Panel_VCC Switch
[G]	1.9V
[S]	11.92V
[D]	11.92V

Q7700

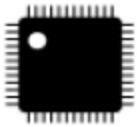
Pin	VGL_FB / VGL Switch
[B]	0.67V
[C]	4.67V
[E]	0V

Q7701

Pin	VGH / VGH_FB Switch
[B]	15.91V
[C]	15.63V
[E]	16.6V

IC7701

Pin	Panle Power Level Shifter	Pin
[1]	8.33V	[15] (-5V)
[2]	8.33V	[16] 28V
[3]	8.33V	[17] 28V
[4]	8.33V	[18] 6.7V
[5]	8.33V	[19] 6.7V
[6]	8.33V	[20] 6.7V
[7]	6.21V	[21] 16.58V
[8]	27.9V	[22] Gnd
[9]	(-5V)	[23] 3.29V
[10]	27.5V to -5V	[24] 0V
[11]	27.5V to -5V	[25] 0V
[12]	(-5V)	[26] 0.07V
[13]	(-5V)	[27] 1.36V
[14]	(-4.9V)	[28] 3.37V



IC7700

Panel Power
DC-to-DC Conv

Pin		Pin	
[1]	1.89V	[25]	4.95V
[2]	1.89V	[26]	0.52V
[3]	3.4V	[27]	3.31V
[4]	3.4V	[28]	3.31V
[5]	1.2V	[29]	5V
[6]	1.2V	[30]	1.27V
[7]	Gnd	[31]	1.59V
[8]	3.4V	[32]	2.8V
[9]	3.4V	[33]	8.12V
[10]	0V	[34]	8.12V
[11]	11.75V	[35]	(-5V)
[12]	11.75V	[36]	0.67V
[13]	11.76V	[37]	13.56V
[14]	11.75V	[38]	12.38V
[15]	8.29V	[39]	10.42V
[16]	8.29V	[40]	5.97V
[17]	Gnd	[41]	5.95V
[18]	Gnd	[42]	2.85V
[19]	Gnd	[43]	6.7V
[20]	11.71V	[44]	6.7V
[21]	11.7V	[45]	6.69V
[22]	14.84V	[46]	6.69V
[23]	10.6V	[47]	Gnd
[24]	Gnd	[48]	Gnd

T-con & Panel Part Numbers

1) 32LH30 Interconnect

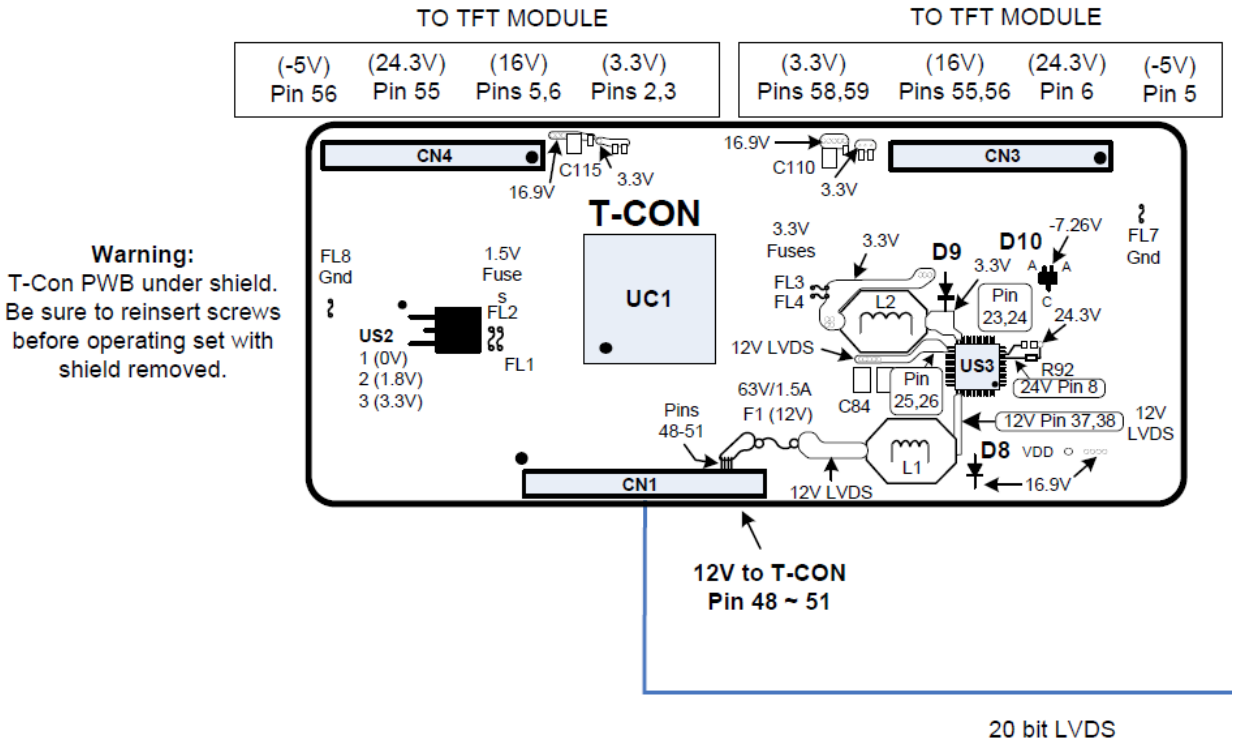
TV Models: JVC LT-32J300, JVC LT-32P300, JVC LT-32JM30, LG 32LG5700, LG 32LH30, LG 32LH3000

Part Number:6871L-1438C

T-con Board P/N: 6870C-0230A (Similar to 6870C-0266A, LC320WUN)

DESC or Panel Sticker Number: LC320WUN-SAB1

Photo Source: Shopjimmy.com



CN1 CONNECTOR "T-CON" PWB CON PWB

Pins 1, 11, 18, 21, 26, 34, 37, 42~46 are all Ground
Pins 1~6 and 47 Are not used

Pin	Pin ID	STBY	Run V	Diode Test
7	LVDS-SEL	0V	0V	1.95V
8	PWM-DIM	0V	*0V	Open
9	OPC-OUT	0V	0V	1.75V
10	OPC-EN	0V	0V	1.75V
12	TXA4+	0V	1.2V	1.1V
13	TXA4-	0V	1.1V	1.1V
14	TXA3+	0V	1.2V	1.1V
15	TXA3-	0V	1.1V	1.1V
16	TXAC+	0V	1.1V	1.1V
17	TXAC-	0V	1.2V	1.1V
19	TXA2+	0V	1.2V	1.1V
20	TXA2-	0V	1.1V	1.1V
32	TXA1+	0V	1.2V	1.1V
23	TXA1-	0V	1.1V	1.1V
24	TXA0+	0V	1.1V	1.1V
25	TXA0-	0V	1.2V	1.1V

Pin	Pin ID	STBY	Run V	Diode Test
27	BIT-SEL	0V	3.24V	1.1V
29	TXB4-	0V	1.2V	1.1V
30	TXB3+	0V	1.2V	1.1V
31	TXB3-	0V	1.1V	1.1V
32	TXBC+	0V	1.1V	1.1V
33	TXBC-	0V	1.2V	1.1V
35	TXB2+	0V	1.1V	1.1V
36	TXB2-	0V	1.2V	1.1V
38	TXB1+	0V	1.1V	0.8V
39	TXB1-	0V	1.2V	1.1V
40	TXB0+	0V	1.1V	0.8V
41	TXB0-	0V	1.2V	1.1V
48	LVDS 12V	0V	12.1V	3.18V
49	LVDS 12V	0V	12.1V	3.18V
50	LVDS 12V	0V	12.1V	3.18V
51	LVDS 12V	0V	12.1V	3.18V

P800 "Main" TO CN1 "T-CON"

Note: CN1 Pin 1 is P800 Pin 51

2) 37LH55 Interconnect

TV Models: LG 37LH55, LG 37LH5000

PANEL P/N: EAT60664401

Part Number: 6871L-1588A

T-con Board P/N: 6870C-0264B

DESC or Panel Sticker Number: LC370WUD-SBM1

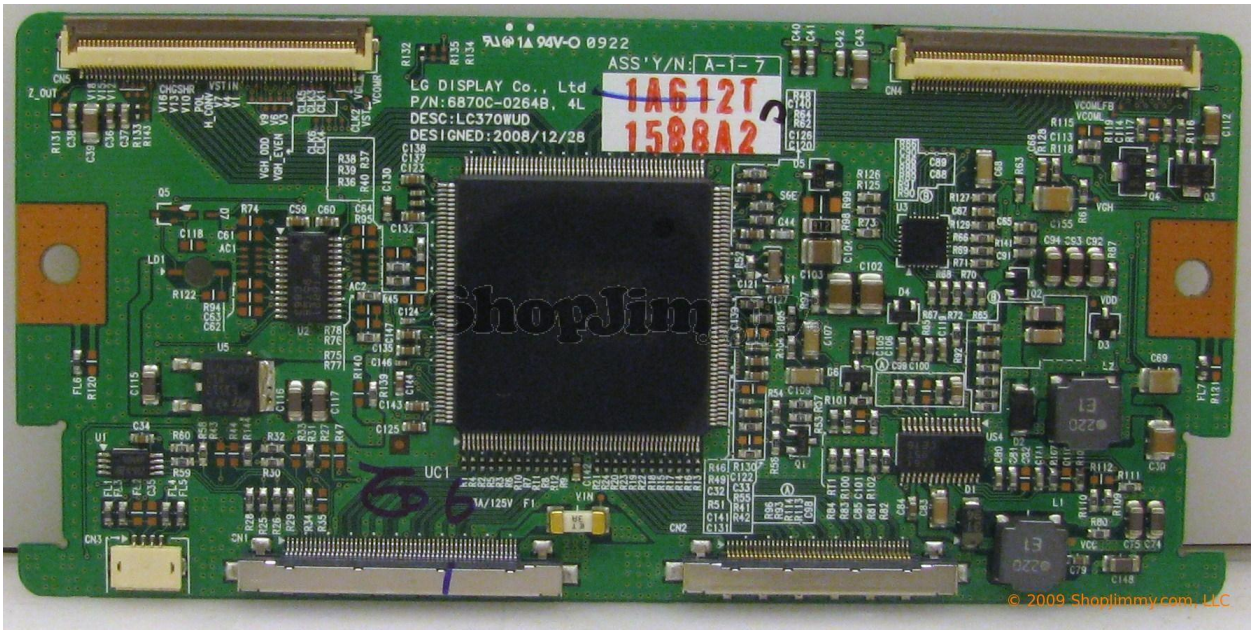
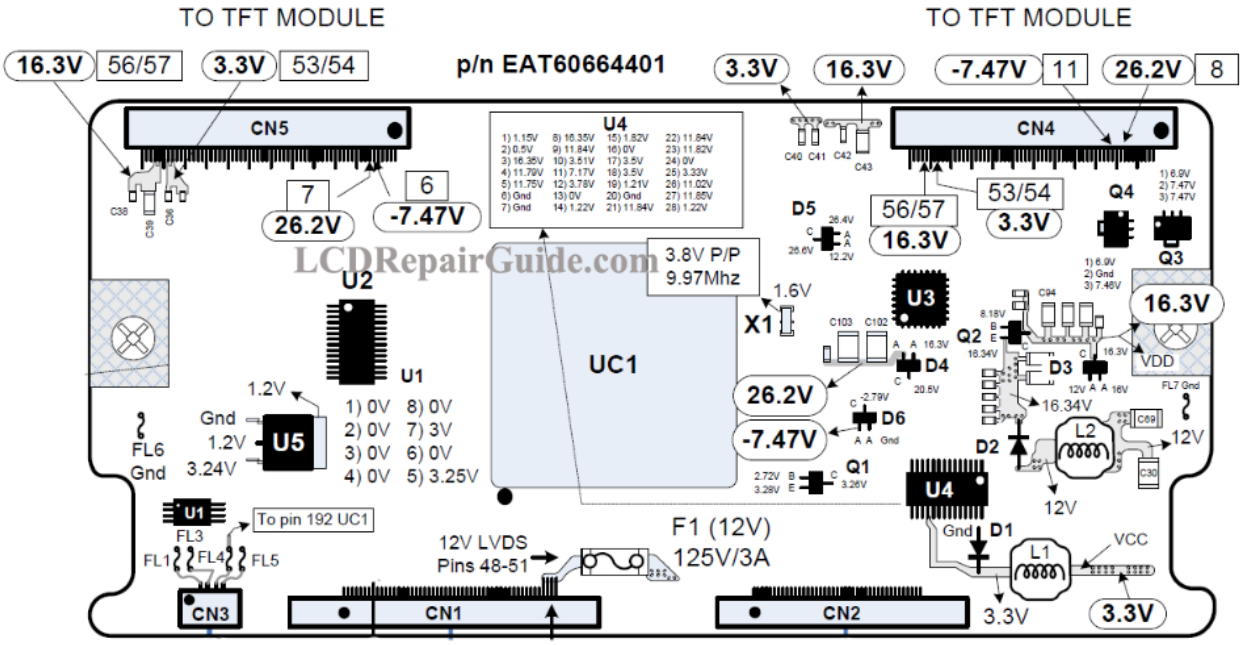


Photo Source: Shopjimmy.com

Warning: T-CON PWB under shield. Put screws back in before operating set with shield removed.

Note: CN1 Pin-1 is P800 Pin-51 (20 bit LVDS)



P800 CONNECTOR "MAIN" AND CN1 T-CON PWB

CN1	P800	Pin ID	Run V	Diode Test
48-51	1-4	12V_TCON	12.06V	3.18V
41	11	URSA_B-4	1.3V	1.1V
40	12	URSA_B+4	1.3V	1.1V
39	13	URSA_B-3	1.3V	1.1V
38	14	URSA_B+3	1.3V	1.1V
36	16	URSA_BCK-	1.1V	1.1V
35	17	URSA_BCK+	1.2V	1.1V
33	19	URSA_B-2	1.3V	1.1V
32	20	URSA_B+2	1.3V	1.1V
31	21	URSA_B-1	1.3V	1.1V
30	22	URSA_B+1	1.3V	1.1V
29	23	URSA_B-0	1.3V	1.1V
28	24	URSA_B+0	1.3V	1.1V
27	25	BIT_SEL	1.1V	1.1V
25	27	URSA_A-2	1.3V	1.1V
24	28	URSA_A+2	1.3V	1.1V

Pins 6-10, 15, 18, 26, 31, 34 and 51 are all Ground.
Pins 5 and 46-50 are not used.

CN1	P800	Pin ID	Run V	Diode Test
23	29	URSA_A-3	1.3V	1.1V
22	30	URSA_A+3	1.3V	1.1V
20	32	URSA_ACK-	1.2V	1.1V
19	33	URSA_ACK+	1.1V	1.1V
17	35	URSA_A-2	1.3V	1.1V
16	36	URSA_A+2	1.3V	1.1V
15	37	URSA_A-1	1.3V	1.1V
14	38	URSA_A+1	1.3V	1.1V
13	39	URSA_A-0	1.3V	1.1V
12	40	URSA_A+0	1.3V	1.1V
11	41	OPC_OUT2	Gnd	Gnd
10	42	OPC_EN	0.6V	1.75V
9	43	OPC_OUT1	3.2V	1.75V
8	44	PWM_DIM	*3.3V	1.3V
7	45	LVDS_SEL	0V	1.95V

U2

1) 7.06V	15) 6.89V
2) 16.27V	16) 16.27V
3) 2.36V	17) 2.36V
4) 13.4V	18) 3.11V
5) 0V	19) 0V
6) 11.14V	20) 16.29V
7) 10.4V	21) 16.27V
8) Gnd	22) 5.25V
9) 0V	23) 6V
10) 16.26V	24) 0V
11) 8.39V	25) 0V
12) 8.1V	26) 0V
13) 3.23V	27) 0V
14) 3.24V	28) 3.25V

U4

1) 1.15V	8) 16.35V	15) 1.82V	22) 11.84V
2) 0.5V	9) 11.84V	16) 0V	23) 11.82V
3) 16.35V	10) 3.51V	17) 3.5V	24) 0V
4) 11.79V	11) 7.17V	18) 3.5V	25) 3.33V
5) 11.75V	12) 3.78V	19) 1.21V	26) 11.02V
6) Gnd	13) 0V	20) Gnd	27) 11.85V
7) Gnd	14) 1.22V	21) 11.84V	28) 1.22V

CN3: Pins-1, 2, 4 => GND, Pin-3= P-DIM. Pin-3 PDIM (Digital Dimming) can vary according to the brightness level of the video signal and the OSD Backlight setting. 0.6V= 0% to 3.3V= 100%. Ouput from the Video Processing chip IC100 (Mstar).

3) 42LB5800 Interconnect

TV Models: LG 42LB5600, LG 42LB5800, LG 42LY540S

PANEL P/N: EAJ62572101

Part Number: 6871L-3454D

T-con Board P/N: 6870C-0480A

DESC or Panel Sticker Number: V14 42 DRD 60Hz Control_Ver0.3

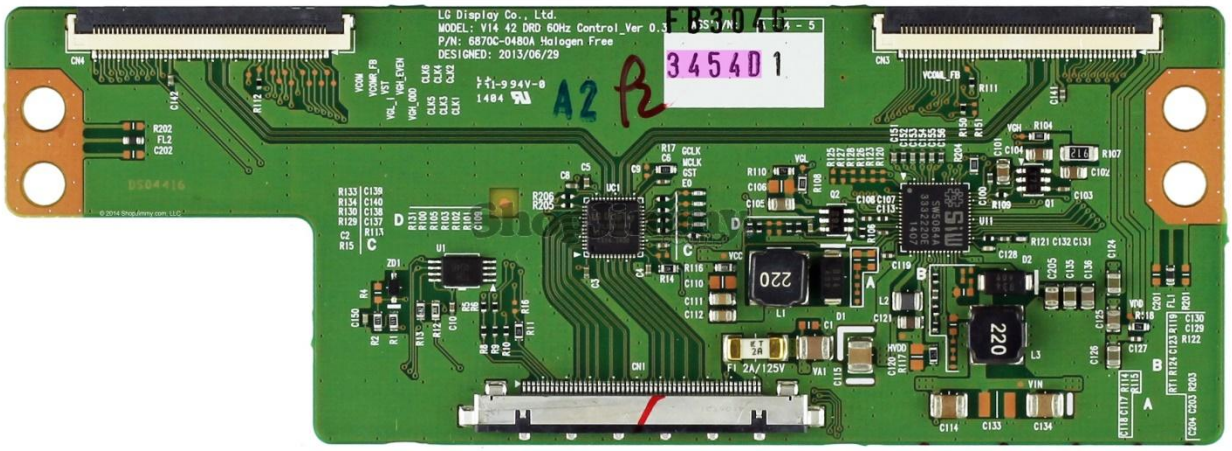
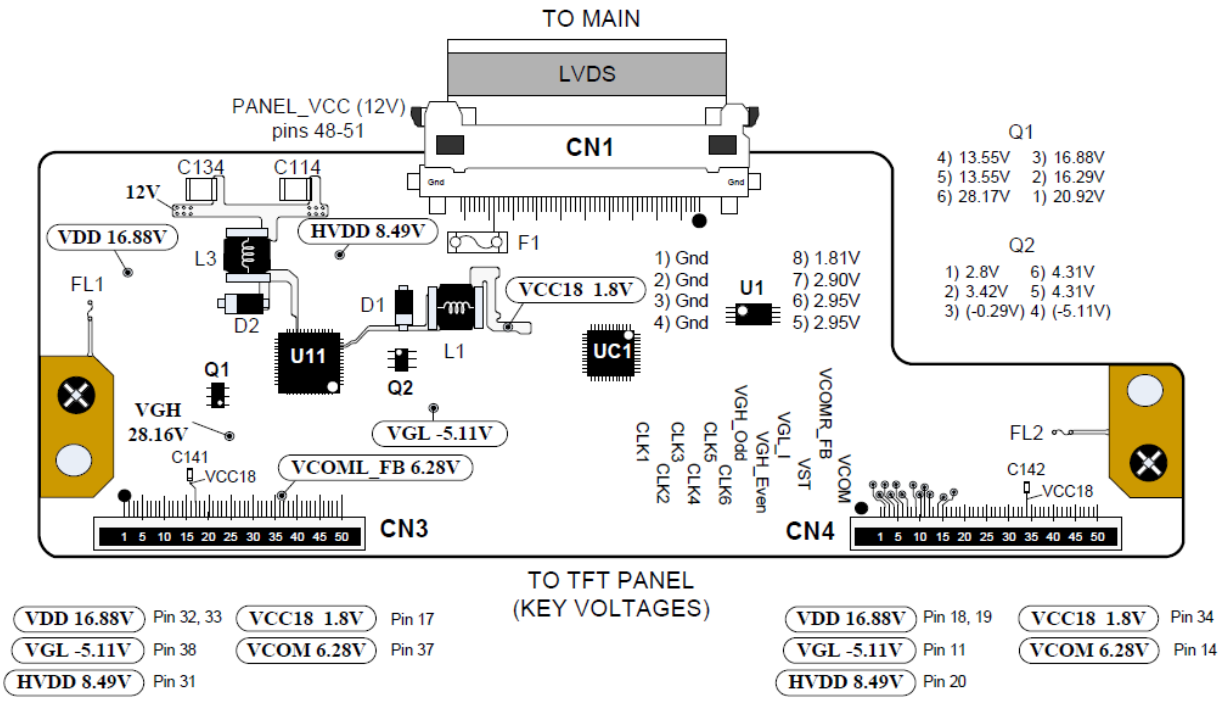


Photo Source: Shopjimmy.com

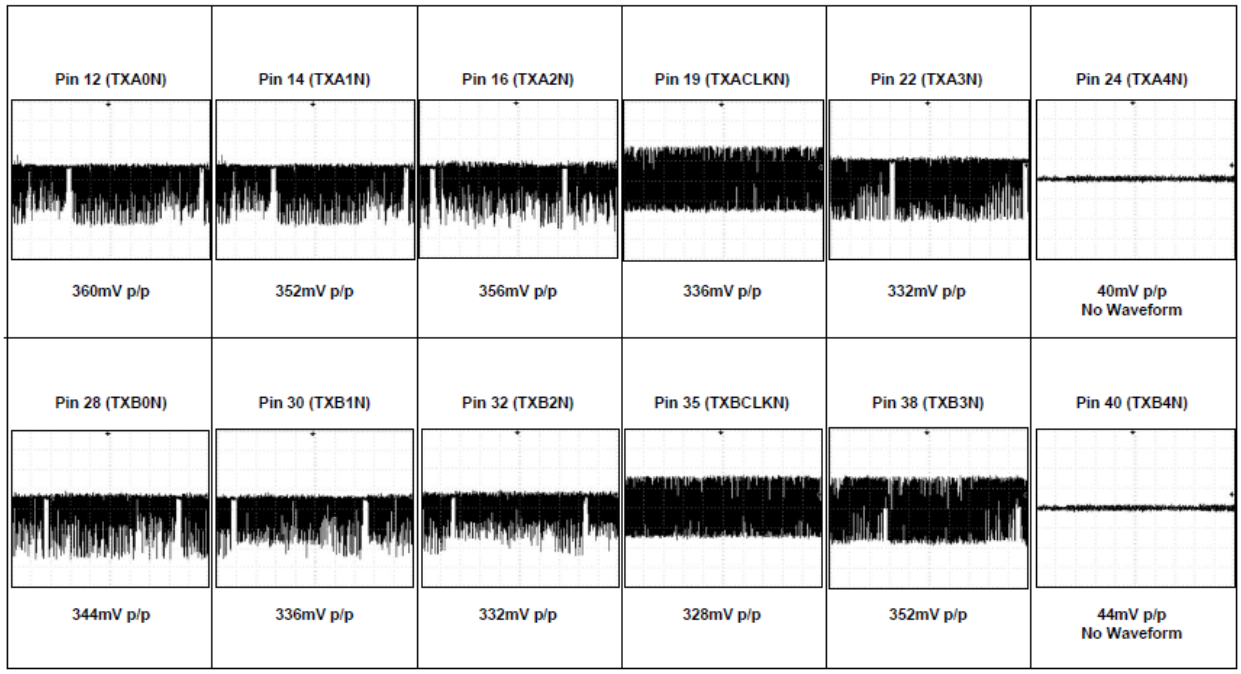
Warning: T-con board under shield. Be sure to reinsert screws before operating set with shield removed.



CN3	OTHER VOLTAGES	CN4	
Pin 8	VGH (U11 pin 42, 43) 28.14V	**Pin 43**	
Pin 9	*VGH_ODD (U11 pin 47) -5.09V to 28.14V	**Pin 42**	**VGH_ODD and *VGH_EVEN cycle between -5.09V to 28.14V every second.*
Pin 10	*VGH_EVEN (U11 pin 46) -5.09V to 28.14V	**Pin 41**	
Pin 12	VST (U11 pin 45) -5.09V	**Pin 39**	
Pin 18-19	VDD (U11 pin 28) 16.88V	**Pin 32-33**	

42LB5800 P7100 LVDS Connector Video Waveforms

All LVDS signals are taken with SMPTY Color Bar signal input (1080P) Component Input. All LVDS signals are “Differential Pairs”. The ones shown are the “Positive” signal of the pair. The Negative signal looks exactly the same but flipped 180 degree. Scope settings are 100mV per/division, 2.5uSec per/division.



4) 42LG70 Interconnect

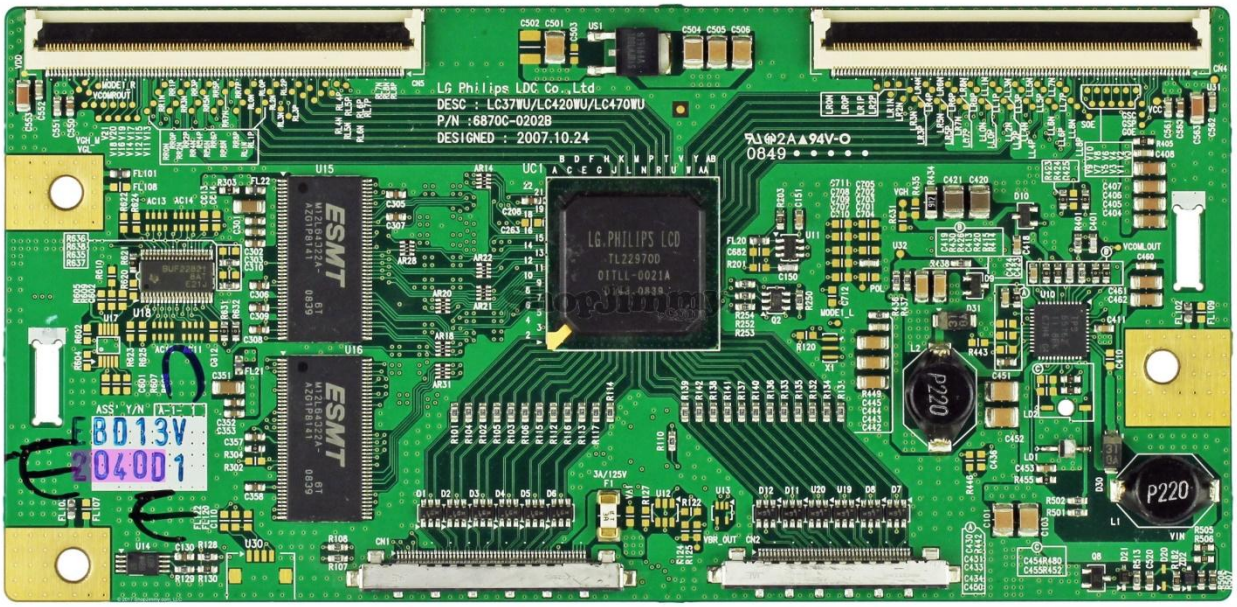
TV Models: LG 42LG70, LG 42LG7000, Philips 42PFL7403D/27, Philips 42PFL7403D/F7, Vizio SV420XVT1A

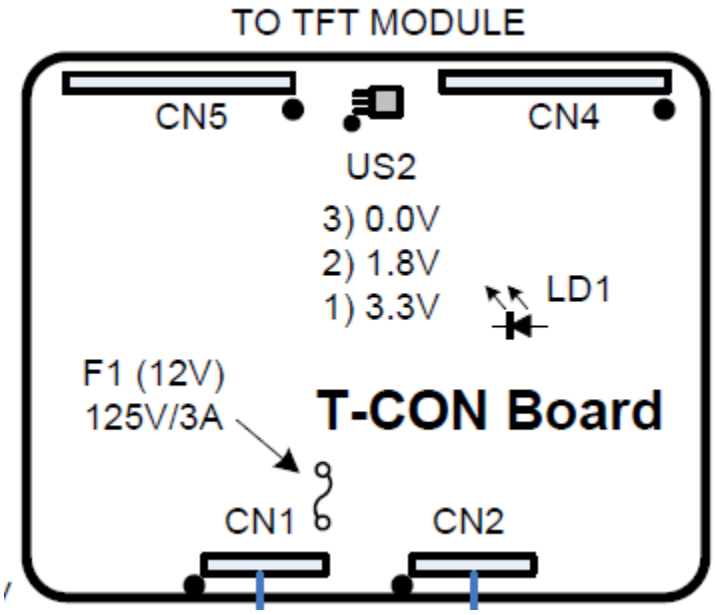
PANEL P/N: EAT56803001

Part Number: 6871L-2040D

T-con Board P/N:6870C-0202B

DESC or Panel Sticker Number: LC420WUF-SAA1





T-con PWB under shield. Be sure to reinsert screws before operating set with shield removed.

LD1:

Set In Stby: LD1 Off (Anode 0V, Cathode 0V)

Power On: LD1 Lit (Anode 12V, Cathode 0V)

Set On: LD1 Off (Anode 12V, Cathode 9.6V)

5) 42LH20 Interconnect

TV Models: 42LH20

PANEL P/N:

Part Number: 6871L-1596A

T-con Board P/N: 6870C-0240C

DESC or Panel Sticker Number: LC-420WXN/LC370WXN (or LC420WXE-SBA1)

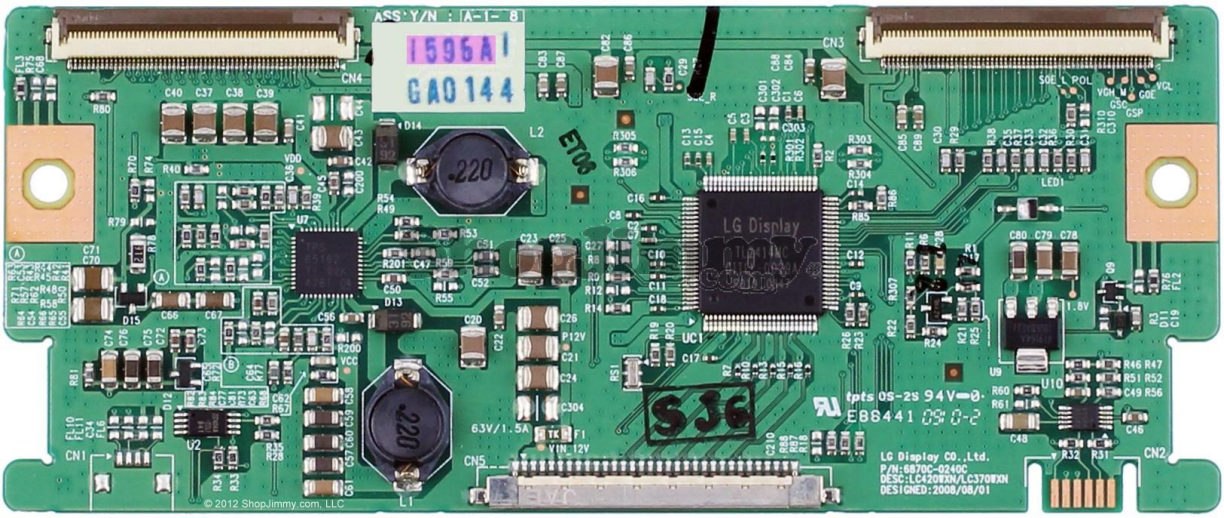
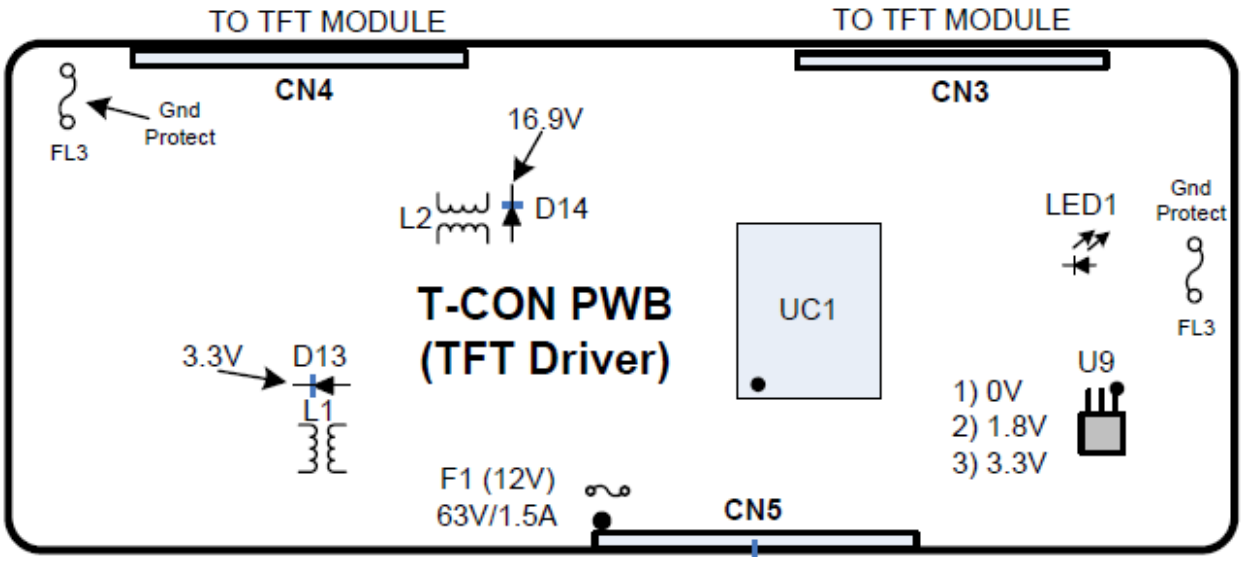


Photo from: Shopjimmy.com

Warning: T-con board under shield. Be sure to reinsert screws before operating set with shield removed.

P801 Pin-3 PWM-DIM, 3.15V (Max 100%) to 0.6V (Min 0%) Customer's MENU backlight setting. However, this is not used on the T-CON Board.



LED1:

Set In Stby: LED1 Off (Anode 0V, Cathode 0V)

Power On: LED1 Lit (Anode 3.3V, Cathode 0V)

Set On: LED1 Off (Anode 3.3V, Cathode 1.3V)

P801 "Main" to CN5 "T-CON"

Pin	LABEL	SBY	Run	Diode Check
1	Gnd	Gnd	Gnd	Gnd
2	Gnd	Gnd	Gnd	Gnd
3	*PWM-DIM	0V	3.1V	1.1V
4	OPC-OUT	0V	3.3V	Open
5	Gnd	Gnd	Gnd	Gnd
6	TXA3+	0V	1.2V	1.1V
7	TXA3-	0V	1.2V	1.1V
8	Gnd	Gnd	Gnd	Gnd
9	TXAC+	0V	1.2V	1.1V
10	TXAC-	0V	1.1V	1.1V
11	Gnd	Gnd	Gnd	Gnd
12	TXA2+	0V	1.1V	1.1V
13	TXA2-	0V	1.2V	1.1V
14	Gnd	Gnd	Gnd	Gnd
15	TXA1+	Gnd	1.1V	1.1V

Pin	LABEL	SBY	Run	Diode Check
16	TXA1-	0V	1.2V	1.1V
17	Gnd	Gnd	Gnd	Gnd
18	TXA0+	0V	1.1V	0.8V
19	TXA0-	0V	1.2V	1.1V
20	Gnd	Gnd	Gnd	Gnd
21	OPC-EN	0V	0V	1.1V
22	LVDS-SEL	0V	0V	Open
23	Gnd	Gnd	Gnd	Gnd
24	Gnd	Gnd	Gnd	Gnd
25	Gnd	Gnd	Gnd	Gnd
26	Gnd	Gnd	Gnd	Gnd
27	LVDS 12V	0V	12.1V	1.6V
28	LVDS 12V	0V	12.1V	1.6V
29	LVDS 12V	0V	12.1V	1.6V
30	LVDS 12V	0V	12.1V	1.6V

6) 42LH50 Interconnect

TV Models: LG 42LH50, LG 42LH5000, LG 42LH5010, VIZIO SV421XVT, SV422XVT

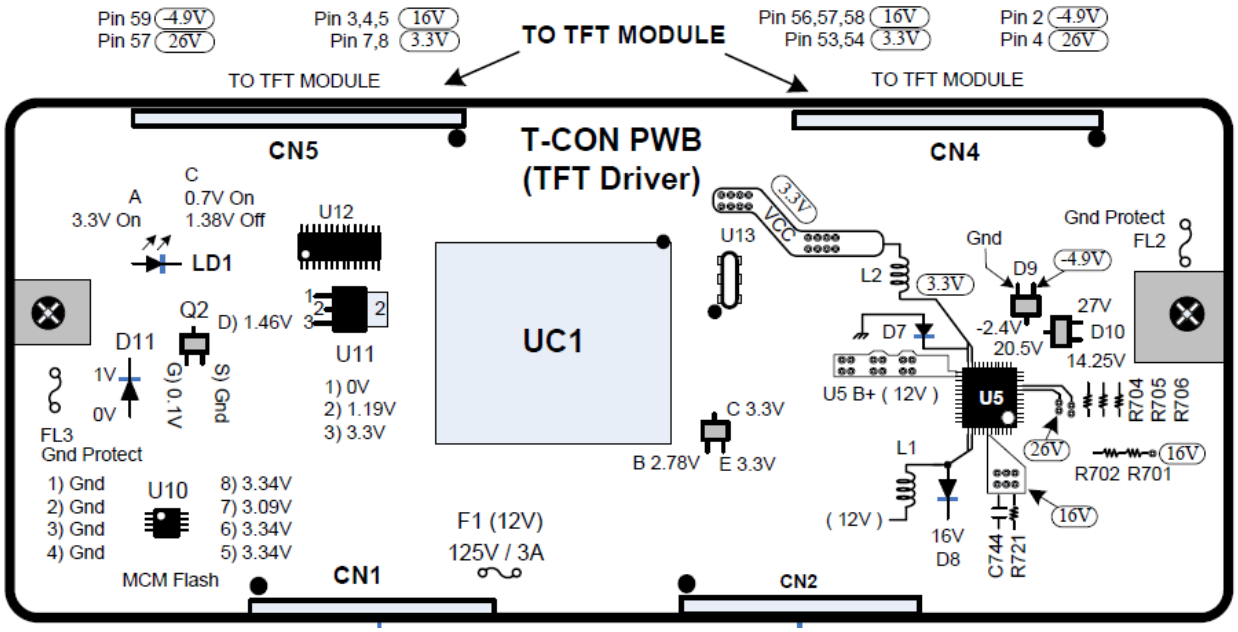
PANEL P/N:

Part Number: 6871L-4700F

T-con Board P/N: 6870C-4100D

DESC or Panel Sticker Number: LC420/470WUF-SBM1_SBL

Photo from: Shopjimmy.com



UC1 drives Q2 which drives LD1 to assist the backlights during start up.

LD1:

Set In Stby: LD1 Off (Anode 0V, Cathode 0V)

Power On: LD1 Lit (Anode 3.3V, Cathode 0.7V)

30 seconds later,

Set On: LD1 Off (Anode 3.3V, Cathode 1.38V)

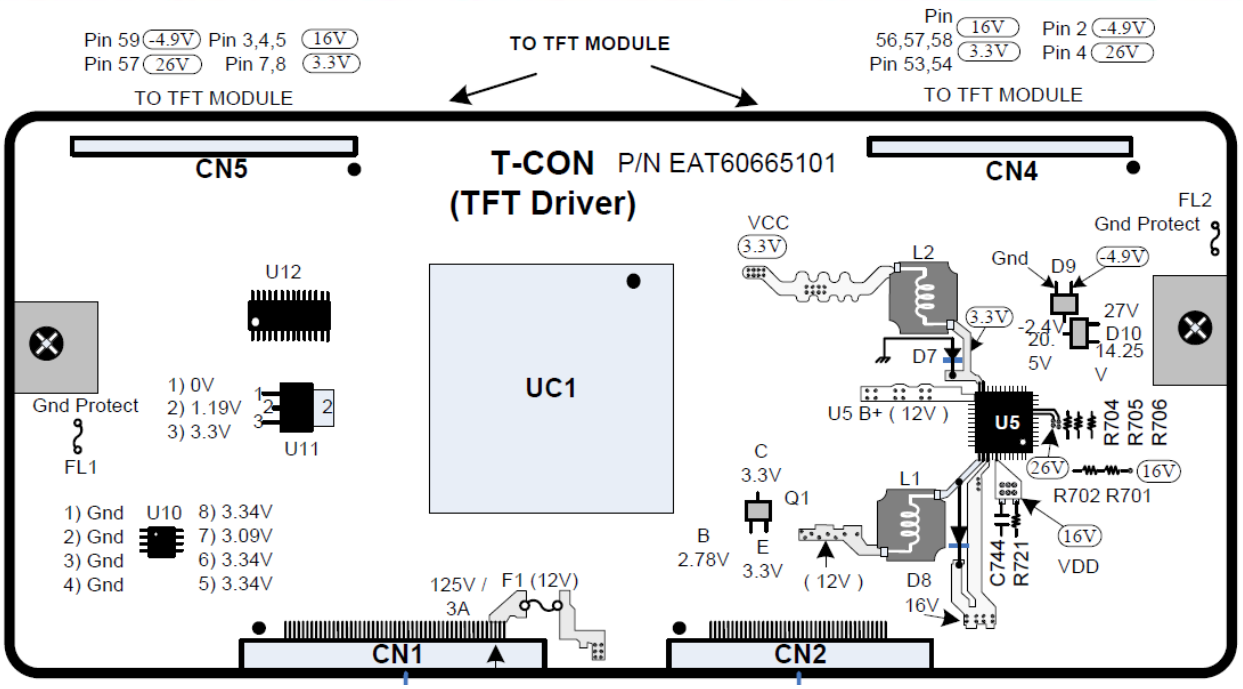
7) 42LH90 Interconnect

TV Models: LG 42LH90

PANEL P/N: EAT60665101

T-con Board P/N: 6870C-4000H

DESC or Panel Sticker Number: LC320/420/470/550WU_120Hz Control (LC420WUL-SBM1)



8) 42LK520 Interconnect

TV Models: LG 42LK520_530, LG 42CS570

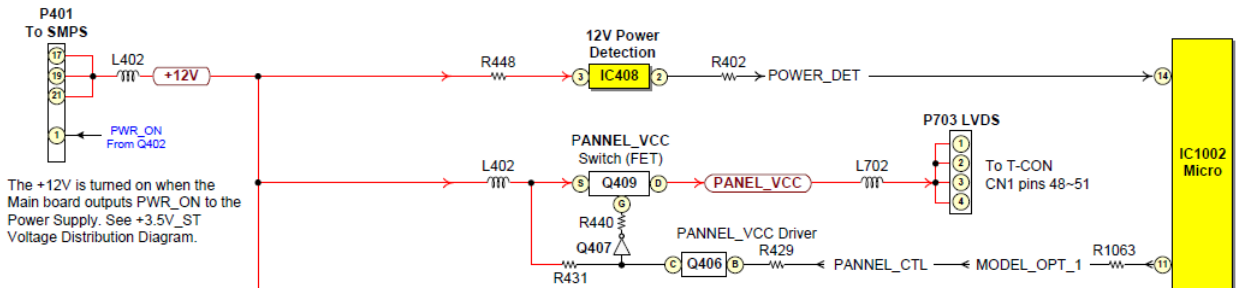
PANEL P/N:

Part Number: 6871L-1973H

T-con Board P/N: 6870C-0309D

DESC or Panel Sticker Number: LC420WUF-SCA2 (DESC: V5 LC370/420WUD)

LG 42LK520 Main +12V Voltage Distribution



Q406

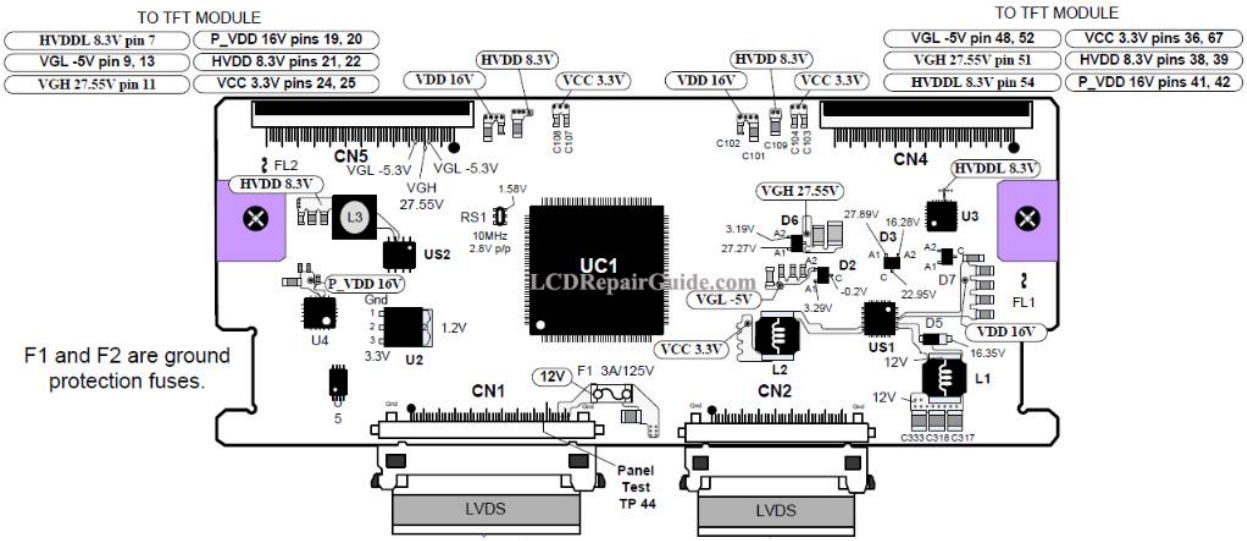
Pin	PANEL_VCC Control 1st Driver
B	0.0V
C	0.68V
E	Gnd

Q407

Pin	PANEL_VCC Control 2nd Driver
B	0.68V
C	0V
E	Gnd

Q409

Pin	PANEL_VCC Switch
S	12.2V (In)
G	1.84V (Enable)
D	12.2V (Out)



US2

1) 12.28V	5) 0.93V
2) 11.99V	6) 1.07V
3) 8.03V	7) 3.29V
4) Gnd	8) 3.59V

U5

1) Gnd	5) 3.28V
2) Gnd	6) 3.28V
3) Gnd	7) 3.29V
4) Gnd	8) 3.27V

Panel Test:

To run the T-CON "Panel Test, remove the LVDS cables. Jump 12V to the 12V fuse. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.

9) 42LN5300 Interconnect

TV Models: LG 42LN5200_5300_5400_5700, LG 42WT30, LG 42WL10, Panasonic TH-42LRU60, Sanyo DP42D23 P42D23-00 & P42D23-11

PANEL P/N: EAJ62310701

Part Number: 6871L-3403A

T-con Board P/N: 6870C-0452A

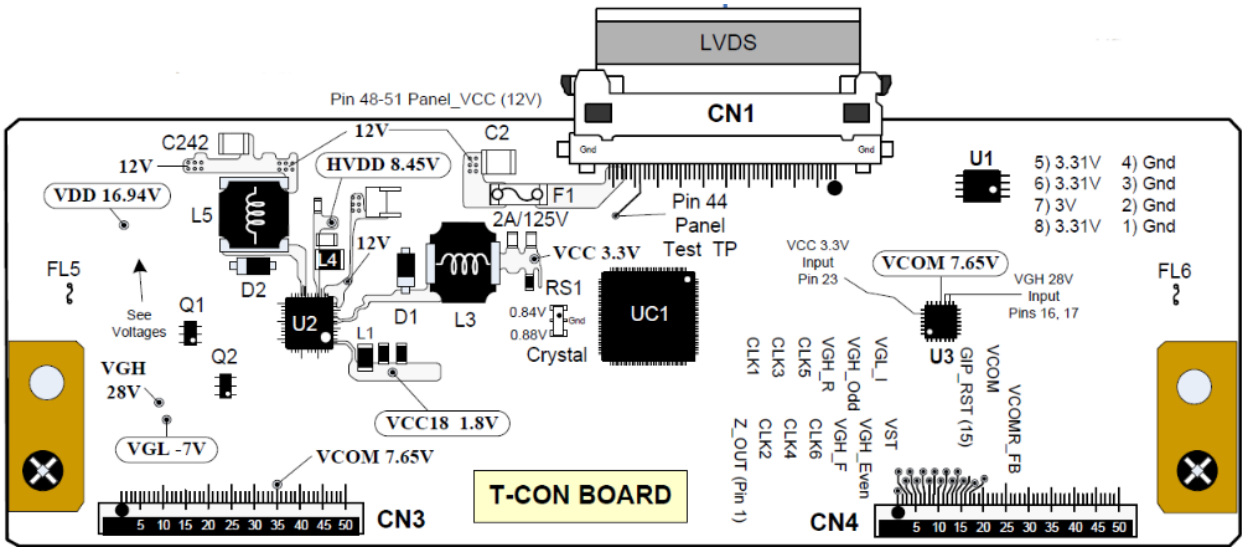
DESC or Panel Sticker Number: LC420DUE-SFR5, LC420DUE-SFR1 (similar to LC500DUE-SFR1)

Photo from: Shopjimmy.com

Warning: Be sure to install the screws in the T-CON board before applying power. Damage to the board will occur.

Panel Test:

To run the T-CON "Panel Test", remove the LVDS cables. Jump 12V to the 12V fuse. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



Additional Voltages from U3 to the Panel with no silk screen labels:

U3 pin 1 (7.76V) CN4 pin 48 CN5 pin 3
U3 pin 2 (7.74V) CN4 pin 47 CN5 pin 4
U3 pin 3 (7.75V) CN4 pin 46 CN5 pin 5
U3 pin 4 (7.74V) CN4 pin 45 CN5 pin 6
U3 pin 5 (7.76V) CN4 pin 44 CN5 pin 7
U3 pin 6 (7.74V) CN4 pin 43 CN5 pin 8
U3 pin 8 (27.9V) CN4 pin 42 CN5 pin 9
U3 pin 9 (-6.97V) CN4 pin 41 CN5 pin 10
U3 pin 10 (-6.95V to 27.9V) CN4 pin 40 CN5 pin 11
U3 pin 11 (-6.95V to 27.9V) CN4 pin 39 CN5 pin 12

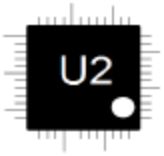
U3 DC-to-DC

Panel Power
Level Shifter

Pin		Pin
[1] 7.76V (GCLK1)	U3	[15] (-6.97) (VGL)
[2] 7.74V (GCLK2)		[16] 27.96V (VGH)
[3] 7.75V (GCLK3)		[17] 27.96V (VGH)
[4] 7.74V (GCLK4)		[18] 7.65V (V_COM)
[5] 7.76V (GCLK5)		[19] 7.65V
[6] 7.74V (GCLK6)		[20] 7.62V
[7] 2.5V		[21] 16.9V
[8] 27.9V (VGH_R)		[22] Gnd
[9] (-6.97) (VGH_F)		[23] 3.3V (VCC)
[10] *(-6.95V to 27.9V) (VGH_ODD)		[24] 0V
[11] *(-6.95V to 27.9V) (VGH_EVEN)		[25] 0V
[12] (-6.91) (VST)		[26] 0.7V
[13] (-6.88) (GIP_RST)		[27] 1.27V
[14] (-6.97)		[28] 3.24V
		* EVERY Second

U2 DC-to-DC

T-CON and Panel Power
DC-to-DC Conv



Pin		Pin	
[1]	1.81V	[25]	4.95V
[2]	1.86V	[26]	0.53V
[3]	Gnd	[27]	3.3V
[4]	3.3V	[28]	3.3V
[5]	1.79V	[29]	4.99V
[6]	1.81V	[30]	1.3V
[7]	Gnd	[31]	16.4V
[8]	3.31V (VCC)	[32]	27.94V
[9]	3.31V (VCC)	[33]	5.69V
[10]	0V	[34]	8.21V
[11]	11.7V (Panel_VCC)	[35]	(-6.98V) (VGL_FB)
[12]	11.7V (Panel_VCC)	[36]	1.19V
[13]	11.7V (Panel_VCC)	[37]	13.86V
[14]	11.7V (Panel_VCC)	[38]	12.85V
[15]	8.45V (H_VDD)	[39]	10.91V
[16]	8.44V (H_VDD_FB)	[40]	6.55V
[17]	Gnd	[41]	4.6V
[18]	Gnd	[42]	3.5V
[19]	Gnd	[43]	7.65V
[20]	11.7V (Panel_VCC)	[44]	7.64V
[21]	11.7V (Panel_VCC)	[45]	7.63V
[22]	16.97V	[46]	7.61V (VCOM_RFB)
[23]	16.97V (VDD)	[47]	1.61V
[24]	Gnd	[48]	Gnd

U1 Buffer

Pin	
[1]	Gnd
[2]	Gnd
[3]	Gnd
[4]	Gnd
[5]	3.31V
[6]	3.31V
[7]	3.31V
[8]	3.31V

Q1 VDD Rectifier

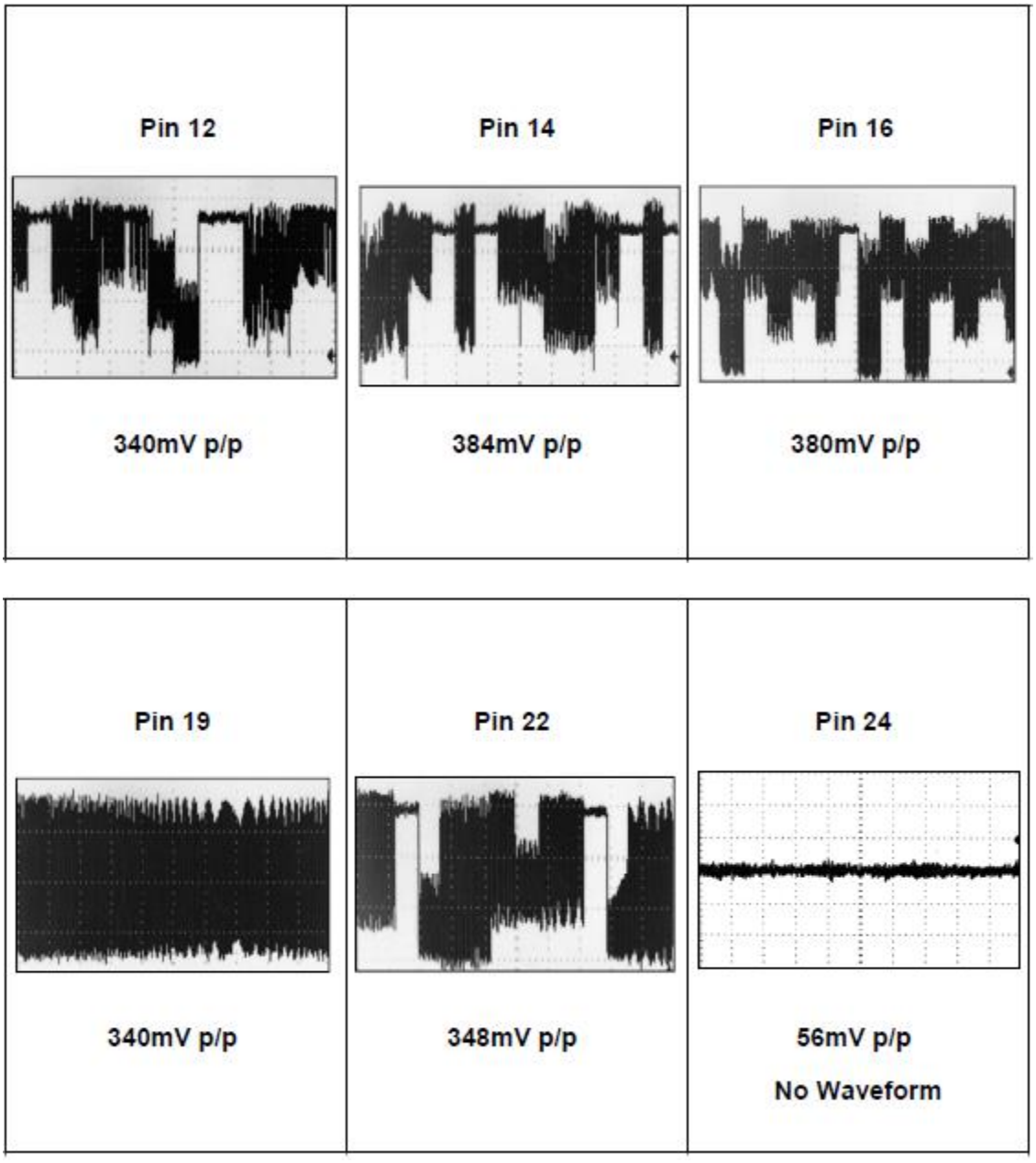
Pin	
[1]	20.2V
[2]	16.38V
[3]	16.93V Output
[4]	12.98V
[5]	12.98V
[6]	12.95V

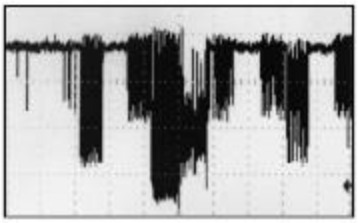
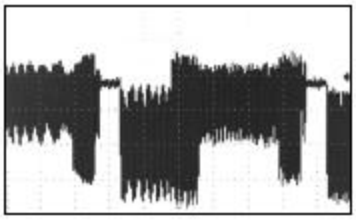
Q2 VGL Rectifier

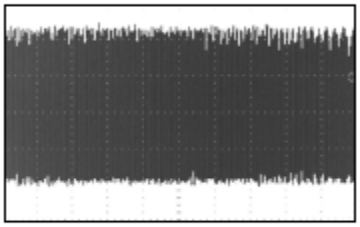
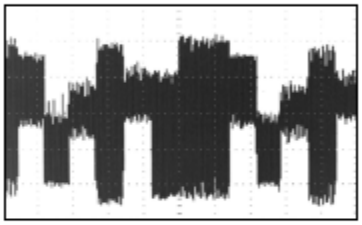
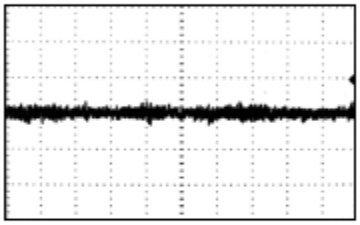
Pin	
[1]	0.56V
[2]	1.18V
[3]	(-2.9V)
[4]	(-7V) Output
[5]	2.97V
[6]	2.97V

LG 42LN5300 P1100 (Mainboard) CN1 (T-CON board) Connector Video Waveforms

All LVDS signals are taken with SMPTY Color Bar signal input (1080P) Component Input. All LVDS signals are “Differential Pairs”. The ones shown are the “Positive” signal of the pair. The Negative signal looks exactly the same but flipped 180 degree. Scope Settings are 100mV per/division, 2.5uSec per/division.



Pin 28	Pin 30	Pin 32
		
384mV p/p	356mV p/p	448mV p/p

Pin 35	Pin 38	Pin 40
		
340mV p/p	449mV p/p	64mV p/p No Waveform

10) 42LV5500 Interconnect

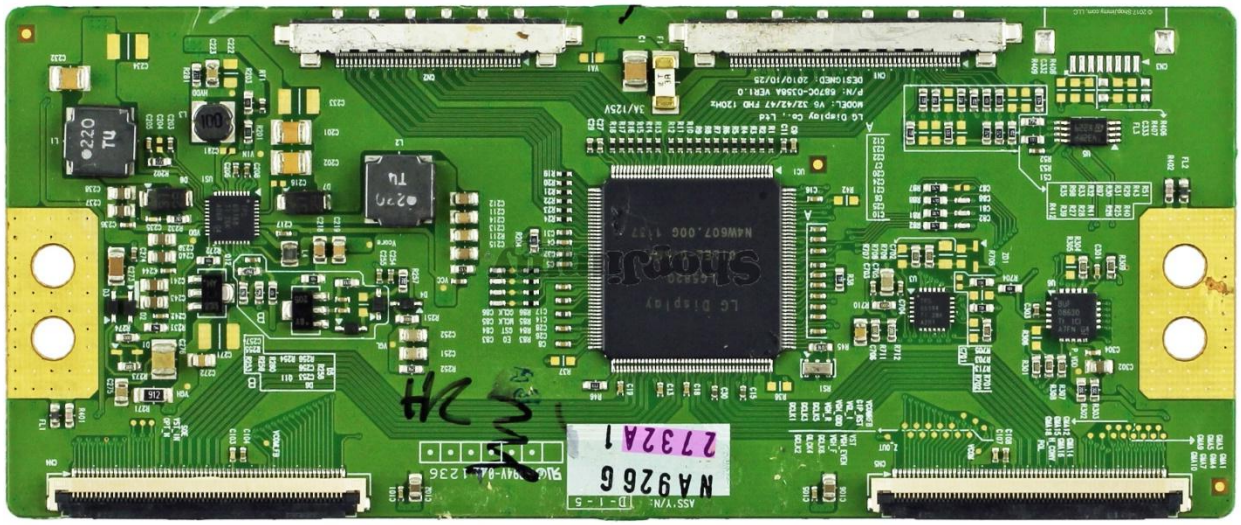
TV Models: LG 42LV5400, LG 42LV5500, LG 42LW5300

PANEL P/N: EAJ61749101

Part Number: 6871L-2693A

T-con Board P/N: 6870C-0358A

DESC or Panel Sticker Number: LC420EUF-SDA1 (V6 32/42/47 FHD 120Hz)

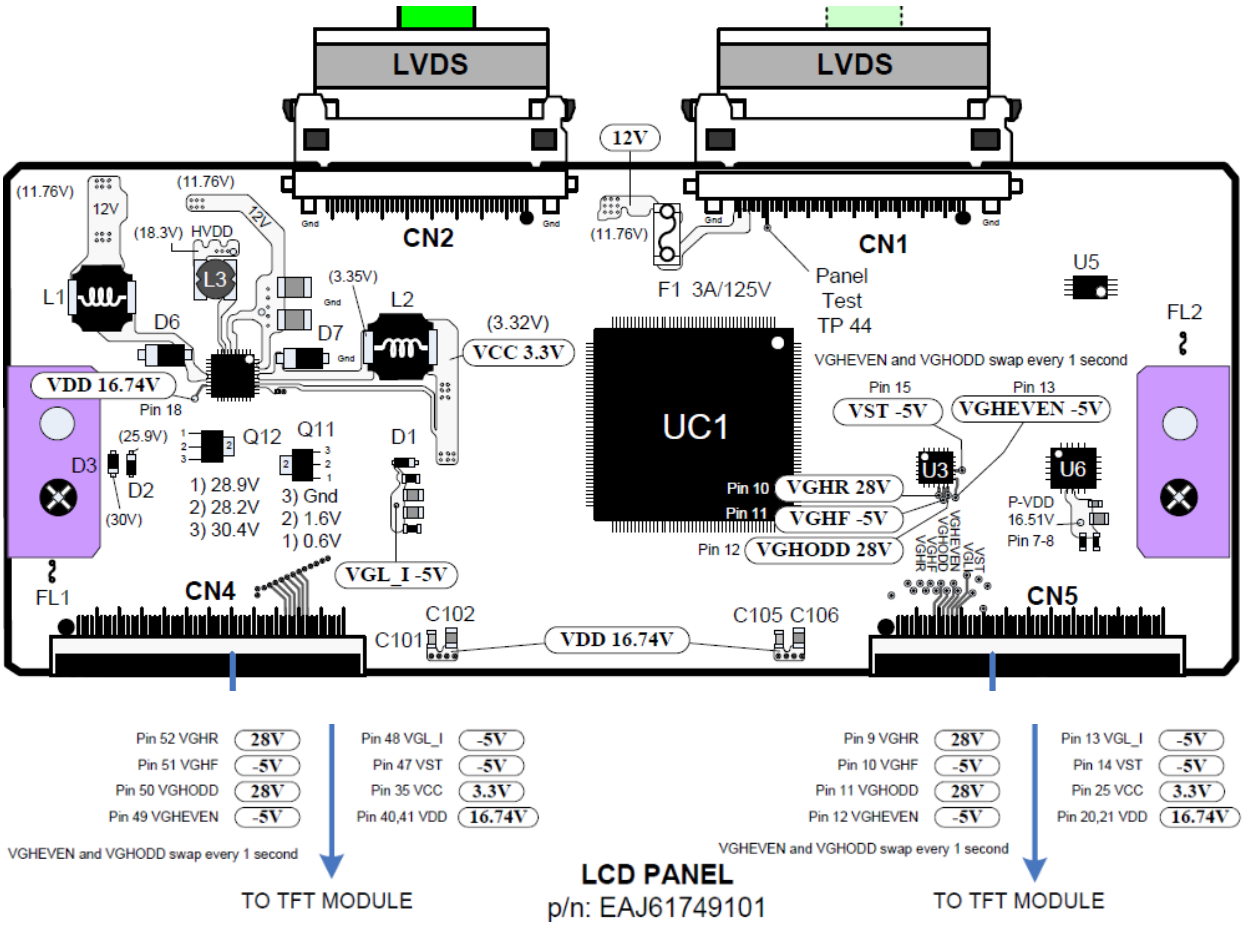


Warning: T-CON Board under shield. Be to reinsert screws before operating set with shield removed.

PANEL Test:

To run the T-con “Panel Test”, remove the LVDS cables. Jump 12V to the 12V fuse. Jup VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.

Note: Before doing the Panel Test, make sure their backlight can lit/operating normally.



U5

5) Gnd 4) 3.31V
6) Gnd 3) 3.3V
7) Gnd 2) 2.95V
8) Gnd 1) 3.3V

11) 42SL80 Interconnect

TV Models: LG 42SL80

PANEL P/N: EAT60667401

Part Number: 6871L-1828A

T-con Board P/N: 6870C-0259A

DESC or Panel Sticker Number: LC420WUD-SBM4 (42/47 Slim & Narrow 240Hz CONTROL)

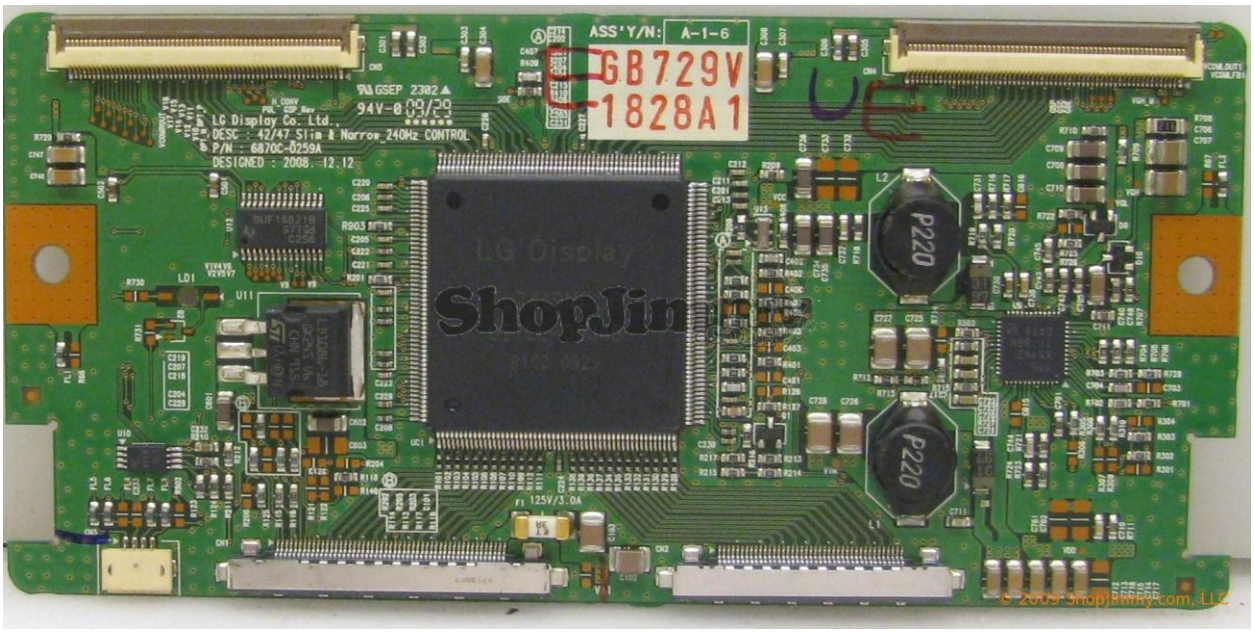
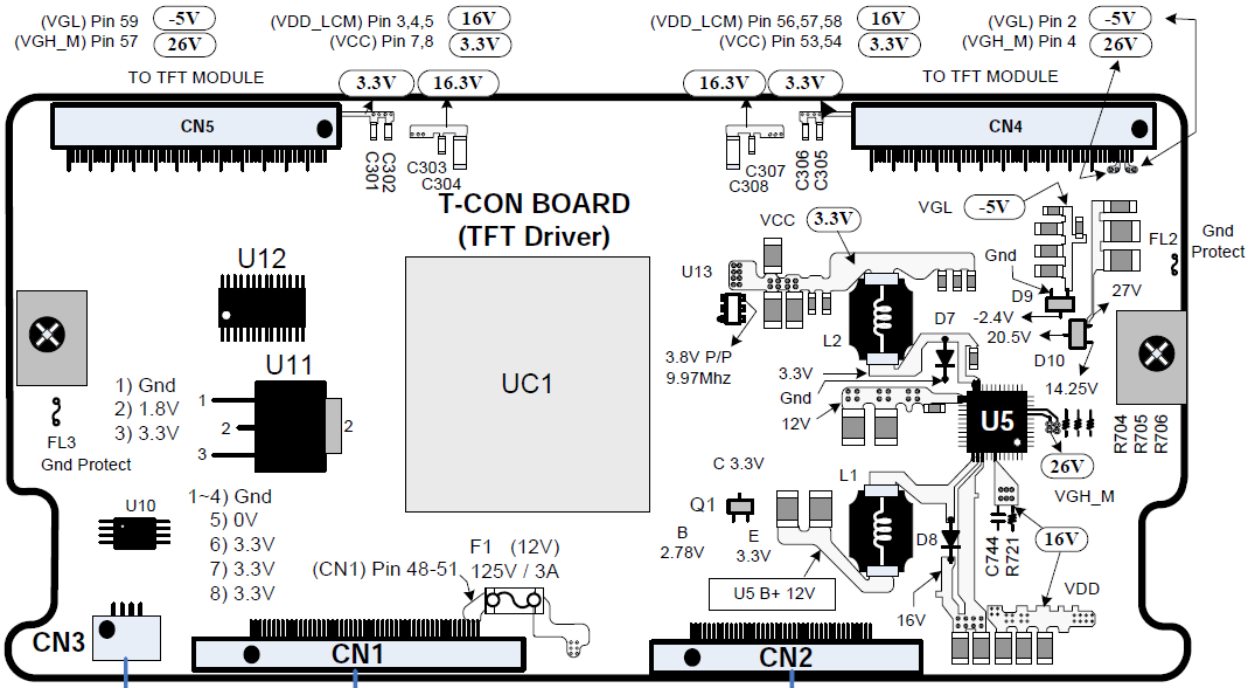


Photo from: Shopjimmy.com



U12

1) 6.9V	15) 3.3V
2) 13.7V	16) Gnd
3) 15.7V	17) Gnd
4) 13.7V	18) Gnd
5) 13.0V	19) 5.8V
6) 12.0V	20) 5.0V
7) 10.9V	21) 3.9V
8) Gnd	22) 2.9V
9) 16.0V	23) 6.0V
10) 10.1V	24) Gnd
11) 8.2V	25) 2.2V
12) 7.7V	26) 0.3V
13) 3.3V	27) 2.2V
14) 3.3V	28) 6.9V

12) 47GA6400 Interconnect

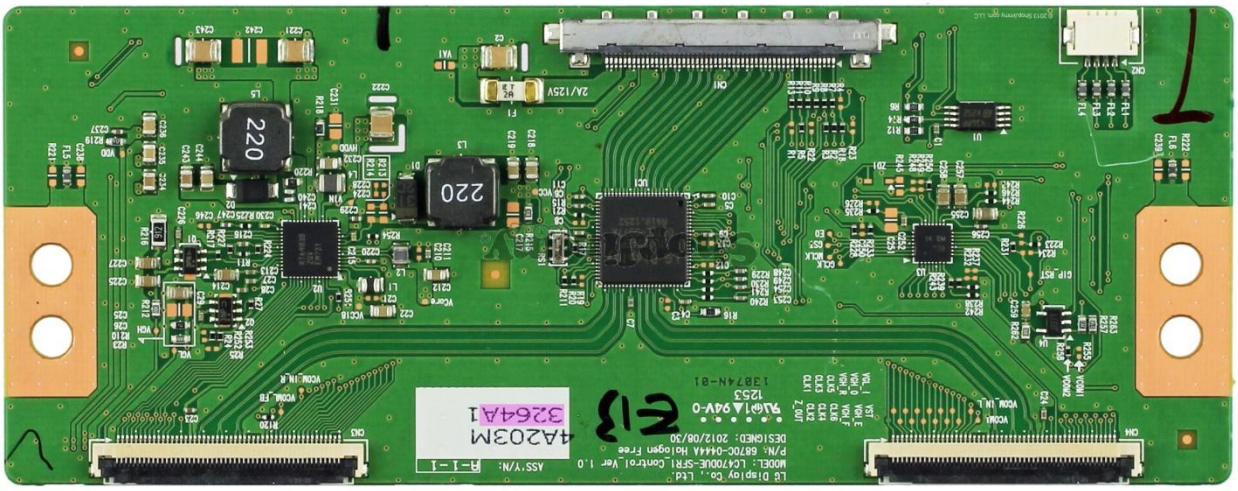
TV Models: LG 47GA6400

PANEL P/N: EAJ62270801

Part Number: 6871L-3264A

T-con Board P/N: 6870C-0444A

DESC or Panel Sticker Number: LC470EUN-SFF2 (DESC: LC470DUE-SFR1)



Warning: Return the screws when servicing the T-CON board with shields removed.

Note: Concerning Quick Start

If Quick Start is turned on in the Options Menu, T-CON 12V will be available during STBY, but there will be no video to process. Also, no Backlight.

CN2: Global Dimming

Pin Label

(1) Scan 1, (2) Scan 2, (3) Scan 3, (4) GND

Note: Pins are inverted on inverter.

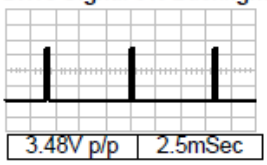
CN4 "INV Board" to "T-CON" CN2

PIN	LABEL	RUN	Diode Check
1	Gnd	Gnd	Gnd
2	Scan 3	0.14V~3.23V	OL
3	Scan 2	0.14V~3.23V	OL
4	Scan 1	0.14V~3.23V	OL

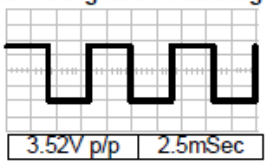
Note: Used for Dimming, See P-DIM.
Pins are inverted on T-CON

Scan 1-3 From the T-CON to the Inverter board (120Hz) For Dimming.

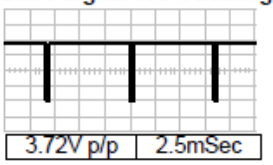
LED Drive Signal 0% Backlights



LED Drive Signal 50% Backlights

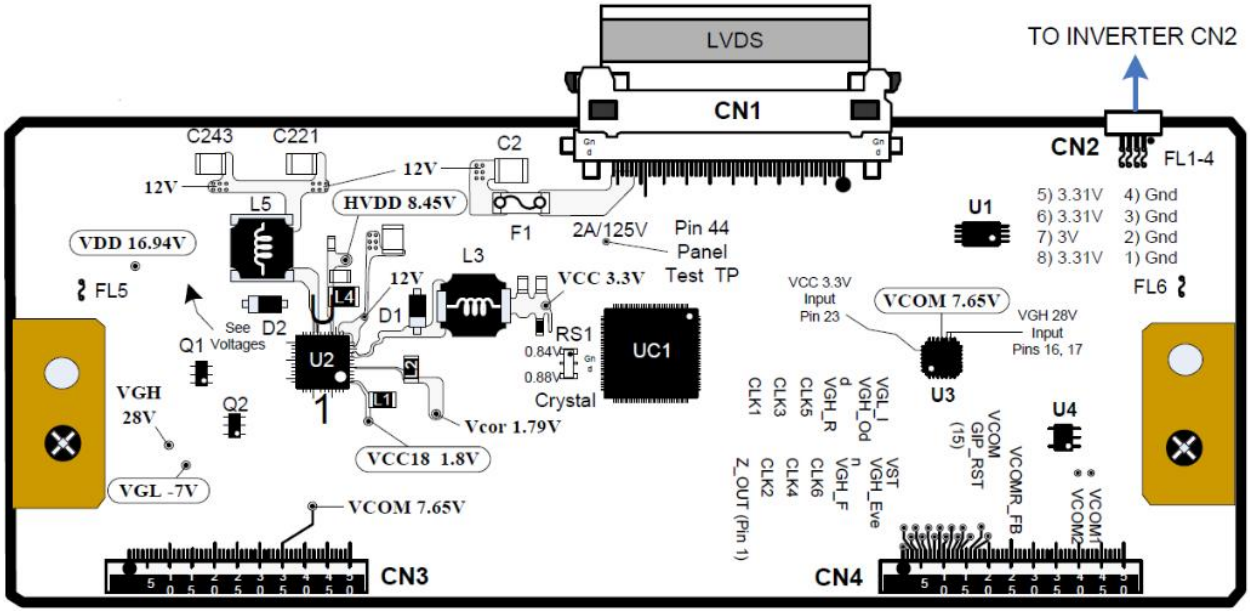


LED Drive Signal 100% Backlights



PANEL Test:

To run the T-CON "Panel Test", remove the LVDS cable CN1. Jump 12V to the 12V fuse on T-con board. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



TO TFT MODULE (KEY VOLTAGES)

VDD 16.94V	Pin 31, 32	VCC18 1.8V	Pin 17	VDD 16.94V	Pin 19, 20	VCC18 1.8V	Pin 34
VGL -7V	Pin 38	VCOM 7.65V	Pin 35	VGL -7V	Pin 13	VCOM 7.65V	Pin 11
HVDD 8.45V	Pin 30			HVDD 8.45V	Pin 21		

Additional Voltages from U3 to the Panel with no silk screen labels:

U10 pin 1 (7.76V) CN4 pin 48 CN5 pin 3
U10 pin 2 (7.74V) CN4 pin 47 CN5 pin 4
U10 pin 3 (7.75V) CN4 pin 46 CN5 pin 5
U10 pin 4 (7.74V) CN4 pin 45 CN5 pin 6
U10 pin 5 (7.76V) CN4 pin 44 CN5 pin 7
U10 pin 6 (7.74V) CN4 pin 43 CN5 pin 8
U10 pin 8 (27.9V) CN4 pin 42 CN5 pin 9
U10 pin 9 (-6.97V) CN4 pin 41 CN5 pin 10
U10 pin 10 (-6.95V to 27.9V) CN4 pin 40 CN5 pin 11
U10 pin 11 (-6.95V to 27.9V) CN4 pin 39 CN5 pin 12

Q1		Q2	
4) 12.98V	3) 16.93V	4) (-7V)	3) (-2.19V)
5) 12.98V	2) 16.38V	5) 2.97V	2) 1.18V
6) 27.95V	1) 20.2V	6) 2.97V	1) 0.55V

U3 DC-to-DC

Panel Power
Level Shifter

Pin		Pin	
[1]	7.76V (GCLK1)	[15]	(-6.97) (VGL)
[2]	**7.74V (GCLK2)**	**[16]**	**27.96V (VGH)**
[3]	7.75V (GCLK3)	[17]	27.96V (VGH)
[4]	7.74V (GCLK4)	[18]	7.65V (V_COM)
[5]	7.76V (GCLK5)	[19]	7.65V
[6]	7.74V (GCLK6)	[20]	7.62V
[7]	2.5V	[21]	16.9V
[8]	27.9V (VGH_R)	[22]	Gnd
[9]	(-6.97) (VGH_F)	[23]	3.3V (VCC)
[10]	*(-6.95V to 27.9V) (VGH_ODD)	[24]	0V
[11]	*(-6.95V to 27.9V) (VGH_EVEN)	[25]	0V
[12]	(-6.91) (VST)	[26]	0.7V
[13]	(-6.88) (GIP_RST)	[27]	1.27V
[14]	(-6.97)	[28]	3.24V

* EVERY Second

U1 Buffer

Pin
[1] Gnd
[2] Gnd
[3] Gnd
[4] Gnd
[5] 3.31V
[6] 3.31V
[7] 3.31V
[8] 3.31V

Q1 VDD Rectifier

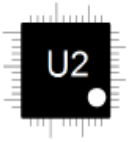
Pin
[1] 20.2V
[2] 16.38V
[3] 16.93V Output
[4] 12.98V
[5] 12.98V
[6] 12.95V

Q2 VGL Rectifier

Pin
[1] 0.56V
[2] 1.18V
[3] (-2.9V)
[4] (-7V) Output
[5] 2.97V
[6] 2.97V

U2 DC-to-DC

T-CON and Panel Power
DC-to-DC Conv



Pin		Pin	
[1]	1.81V	[25]	4.95V
[2]	**1.86V**	**[26]**	**0.53V**
[3]	Gnd	[27]	3.3V
[4]	3.3V	[28]	3.3V
[5]	1.79V	[29]	4.99V
[6]	1.81V	[30]	1.3V
[7]	Gnd	[31]	16.4V
[8]	3.31V (VCC)	[32]	27.94V
[9]	3.31V (VCC)	[33]	5.69V
[10]	0V	[34]	8.21V
[11]	11.7V (Panel_VCC)	[35]	(-6.98V) (VGL_FB)
[12]	11.7V (Panel_VCC)	[36]	1.19V
[13]	11.7V (Panel_VCC)	[37]	13.86V
[14]	11.7V (Panel_VCC)	[38]	12.85V
[15]	8.45V (H_VDD)	[39]	10.91V
[16]	8.44V (H_VDD_FB)	[40]	6.55V
[17]	Gnd	[41]	4.6V
[18]	Gnd	[42]	3.5V
[19]	Gnd	[43]	7.65V
[20]	11.7V (Panel_VCC)	[44]	7.64V
[21]	11.7V (Panel_VCC)	[45]	7.63V
[22]	16.97V	[46]	7.61V (VCOM_RFB)
[23]	**16.97V (VDD)**	**[47]**	**1.61V**
[24]	Gnd	[48]	Gnd

13) 47LB6000 Interconnect

TV Models: LG 47LB6000

PANEL P/N: EAJ63007701

Part Number: 6871L-3744A

T-con Board P/N: 6870C-0481A

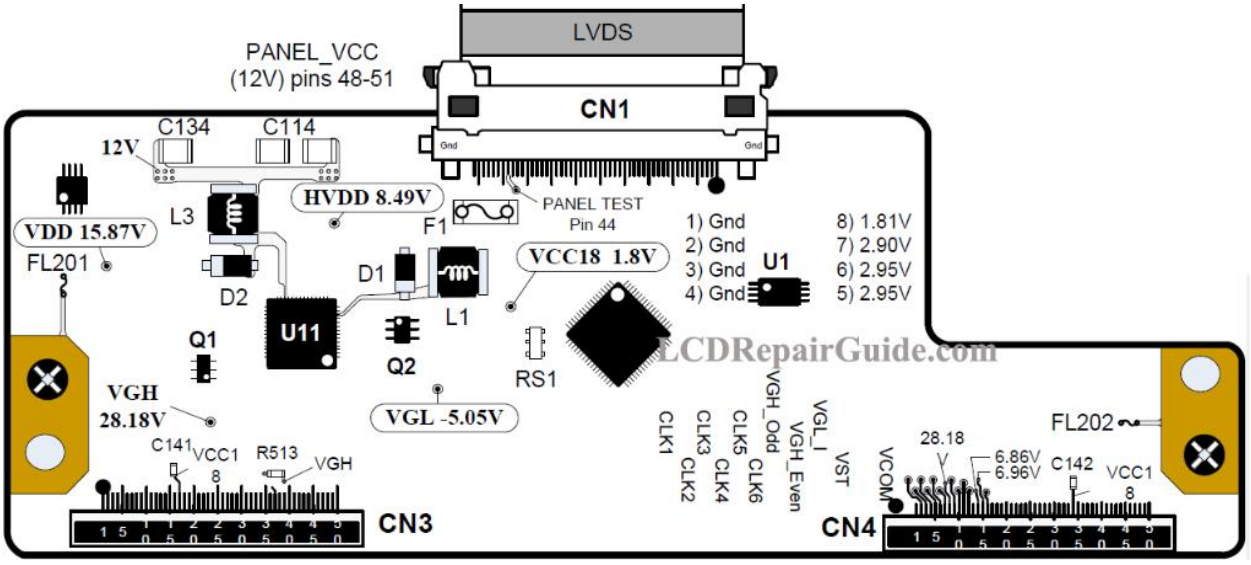
DESC or Panel Sticker Number: V14 60Hz 1GID

Warning:

Be sure to install the screws in the T-CON board before applying power. Damage to the board will occur.

PANEL Test:

To run the T-CON “Panel Test”, use the Smart Test Jig or remove the LVDS cables. Jump 12V to the 12V fuses. Apply 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



TO TFT PANEL
(KEY VOLTAGES)

VDD 15.87V	Pin 32, 33	VCC18 1.8V	Pin 17
VGL -5.11V	Pin 38	VGH 28.18V	Pin 8
HVDD 8.49V	Pin 31		

VDD 15.87V	Pin 18, 19	VCC18 1.8V	
VGL -5.11V	Pin 11	VGH 28.18V	
HVDD 8.49V	Pin 20		

CN3	OTHER VOLTAGES	CN4
	VGH (U11 pin 42, 43) 28.18V	
Pin 8	*VGH_ODD (U11 pin 47) -5.09V to 28.14V	Pin 43
Pin 9	*VGH_EVEN (U11 pin 46) -5.09V to 28.14V	Pin 42
Pin 10	VST (U11 pin 45) -5.09V	Pin 41
Pin 12	VDD (U11 pin 28) 16.88V	Pin 39
Pin 18-19		Pin 32-33

**VGH_ODD and *VGH_EVEN cycle between -5.09V to 28.14V every second.*

Q1

4) 14.03V	3) 15.99V
5) 14.03V	2) 15.33V
6) 28.17V	1) 21.19V

Q2

1) 2.29V	6) 5.0V
2) 2.83V	5) 5.0V
3) 0.1V	4) (-5.05V)

14) 47LG90 Interconnect

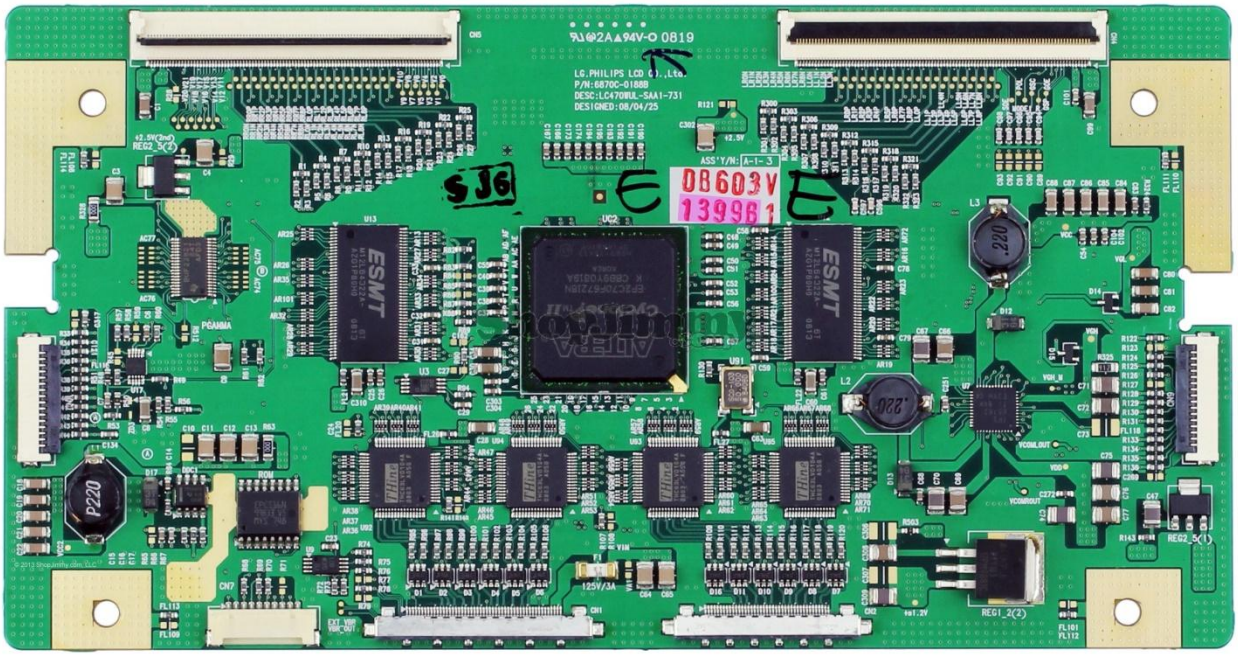
TV Models: LG 47LG90

PANEL P/N:

Part Number: 6871L-1399B

T-con Board P/N: 6870C-0188B

DESC or Panel Sticker Number: LC470WUL-SAA1-731

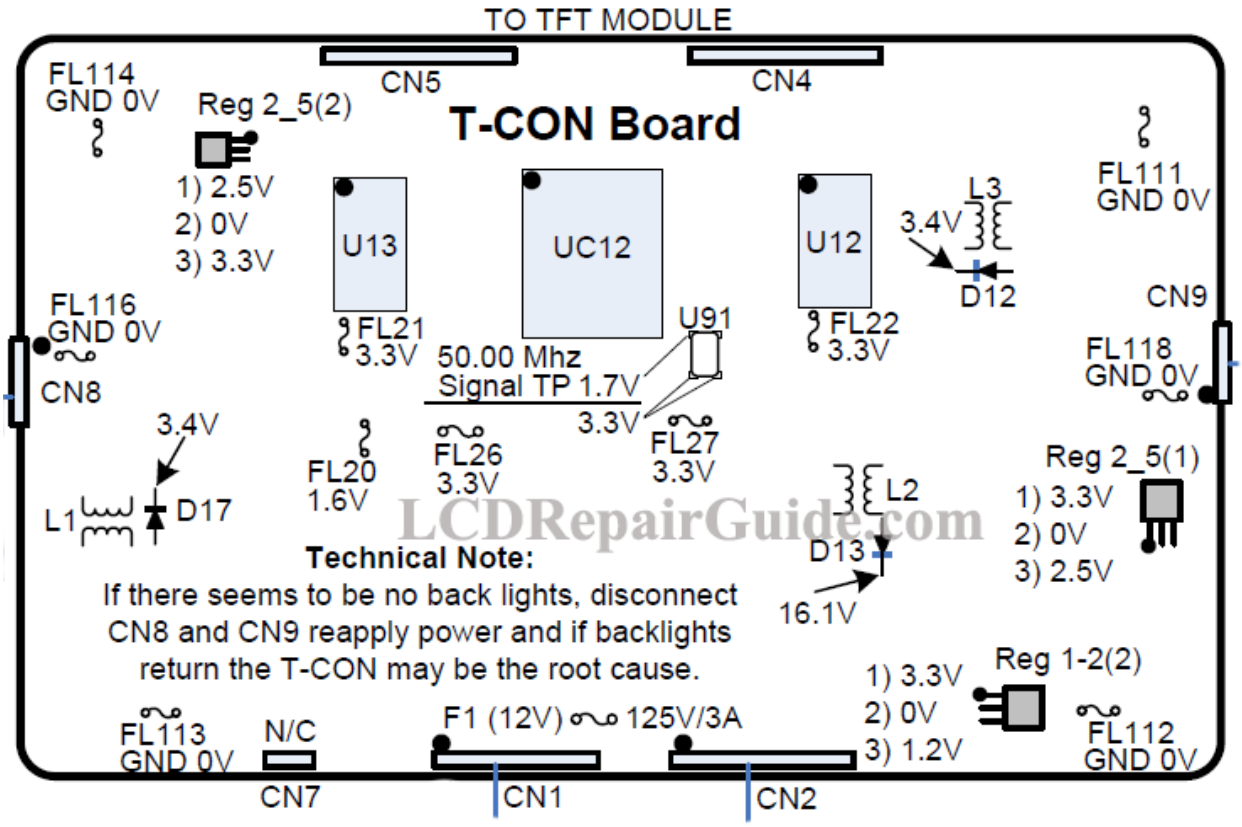


Warning:

T-CON Board under shield. Be sure to reinsert screws before operating set with shield removed.

Technical Note:

If there seems to be no back lights, disconnect CN8 and CN9 reapply power and if backlights return the T-CON may be the root cause.



CN304 INVERTER "M" TO CN8 "T-CON"

CN304					CN8
Pin	Label	STBY	Run	Diode Check	Pin
1,2,3	Gnd	Gnd	Gnd	Gnd	14,15,16
4	EXT_VBR B	0V	.3/3.4V	Open	13
5	Gnd	Gnd	Gnd	Gnd	12
6	AFLC_SPI_EN	0V	0.1V	1.0V	11
7	AFLC_DET	0V	0V	1.1V	10
8	VBR_LAT	0V	0V	Open	9
9	VBR_SIN	0V	0V	Open	8
10	VBR_SCLK	0V	0V	Open	7
11	DRV_XLATO	0V	0V	1.0V	6
12	n/c	n/c	n/c	Open	5
13	DRV_SIN0	0V	1V	1.0V	4
14	DRV_SCLK0	0V	1V	1.0V	3
15	DRV_BLK0	0V	0V	0.9V	2
16	DRV_GSCLK0	0V	1.7V	0.9V	1

CN804 INVERTER "S" TO CN9 "T-CON"

CN9					CN804
Pin	Label	STBY	Run	Diode Check	Pin
14,15,16	Gnd	Gnd	Gnd	Gnd	1,2,3
13	n/c	n/c	n/c	Open	4
12	n/c	n/c	Gnd	Gnd	5
11	AFLC_SPI_EN	0V	0.13V	1.0V	6
10	AFLC_DET	0V	0V	1.1V	7
9	VBR_LAT	0V	0V	Open	8
8	VBR_SIN	0V	0V	Open	9
7	VBR_SCLK	0V	0V	Open	10
6	DRV_XLATO	0V	0V	1.0V	11
5	n/c	n/c	n/c	Open	12
4	DRV_SIN0	0V	1V	1.0V	13
3	DRV_SCLK0	0V	1V	1.0V	14
2	DRV_BLK0	0V	0V	0.9V	15
1	DRV_GSCLK0	0V	1.7V	0.9V	16

15) 47LH85 Interconnect

TV Models: LG 47LF7700, LG 47LH85

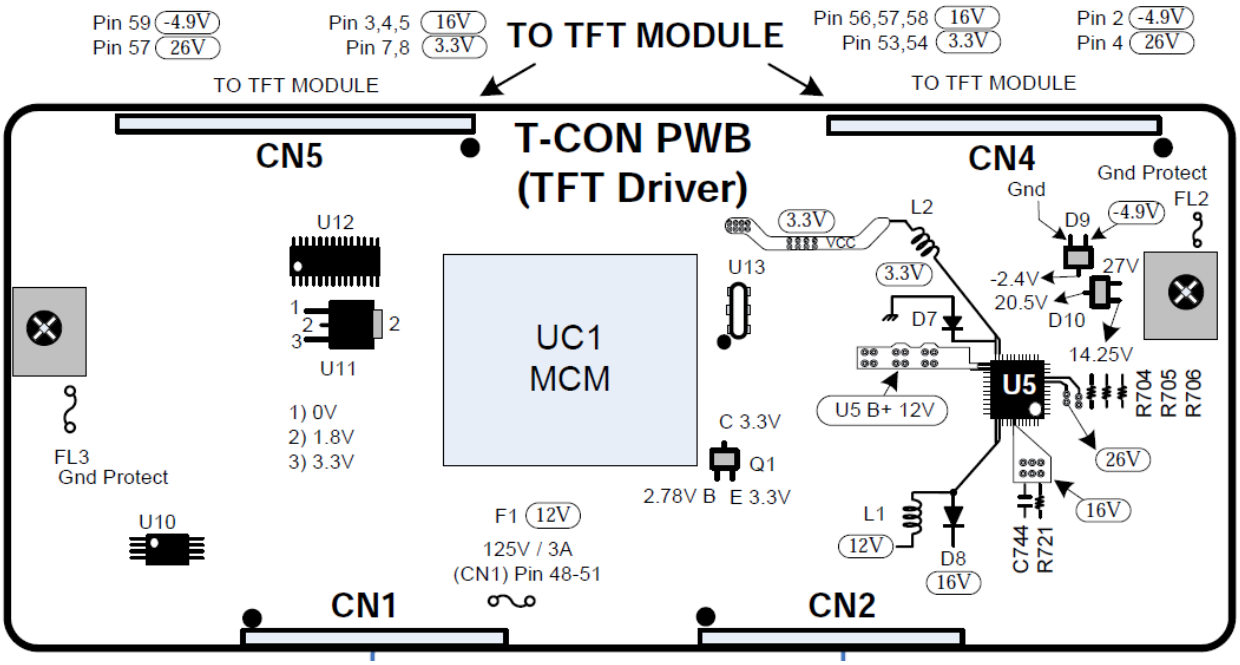
PANEL P/N:

Part Number: 6871L-4470F

T-con Board P/N: 6870C-4000H

DESC or Panel Sticker Number: LC470WUF-SBB1 (DESC: LC320/420/470/550WU_120Hz CONTROL)

ASS'Y/N: A-1-6
AB716V
4470F1
LG Display Co. Ltd.
DESC : LC320/420/470/550WU 120Hz CONTROL
P/N : 6870C-4000H
DESIGNED : 2008. 10. 20
ShopJim


Pin 59 -4.9V
Pin 57 26V
Pin 3,4,5 16V
Pin 7,8 3.3V
TO TFT MODULE
Pin 56,57,58 16V
Pin 53,54 3.3V
Pin 2 -4.9V
Pin 4 26V
TO TFT MODULE
TO TFT MODULE
CN5
T-CON PWB
(TFT Driver)
CN4
Gnd Protect
Gnd
FL2
U12
1
2
3
2
U11
1) 0V
2) 1.8V
3) 3.3V
UC1
MCM
3.3V
VCC
L2
U13
3.3V
D7
D9
-4.9V
-2.4V
20.5V
27V
D10
14.25V
U5
U5 B+ 12V
R704
R705
R706
C 3.3V
Q1
2.78V B E 3.3V
26V
16V
C744
R721
FL3
Gnd Protect
U10
F1 12V
125V / 3A
(CN1) Pin 48-51
L1
12V
D8
16V
CN1
CN2

16) 47LN5750 Interconnect

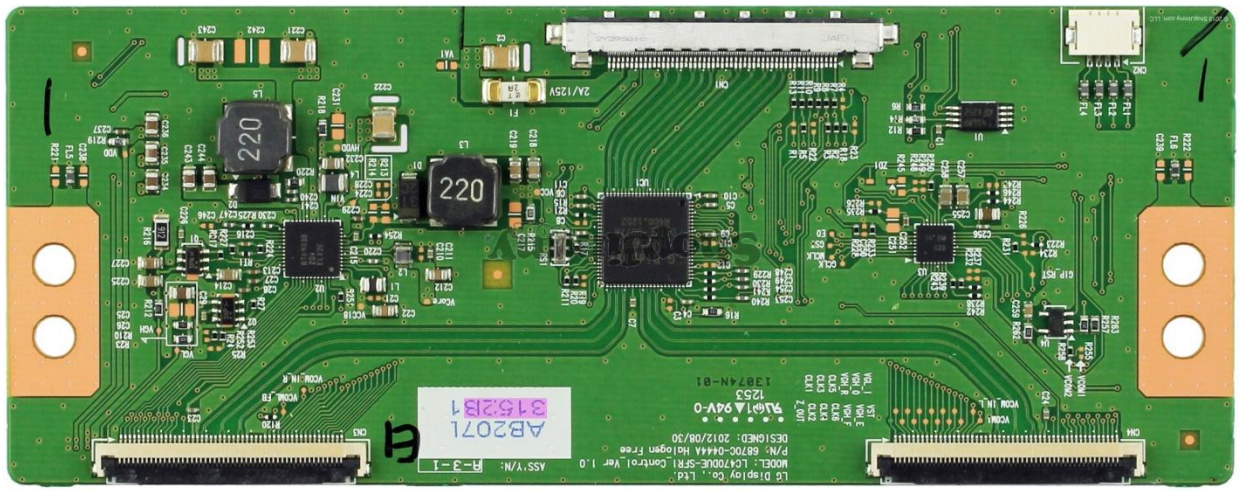
TV Models: LG 47LN5200_5400_5700_5750_5790

PANEL P/N: EAJ62310101

Part Number: 6871L-3152B

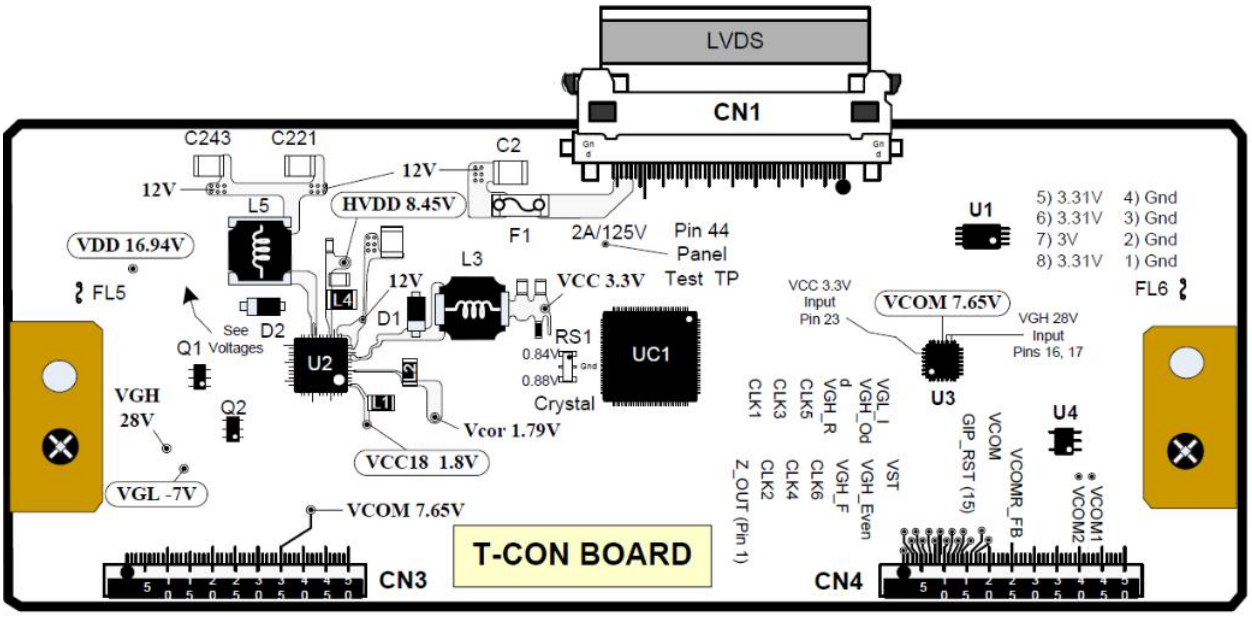
T-con Board P/N: 6870C-0444A

DESC or Panel Sticker Number: LC470DUE-SFU1 (DESC: LC470DUE-SFR1)



PANEL Test:

To run the T-CON “Panel Test”, remove the LVDS cables. Jump 12V to the 12V fuse. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



VDD 16.94V	Pin 31, 32	VCC18 1.8V	Pin 17		VDD 16.94V	Pin 19, 20	VCC18 1.8V	Pin 34
VGL -7V	Pin 38	VCOM 7.65V	Pin 35	**TO TFT MODULE (KEY VOLTAGES)**	VGL -7V	Pin 13	VCOM 7.65V	Pin 11
HVDD 8.45V	Pin 30				HVDD 8.45V	Pin 21		

Additional Voltages from U3 to the Panel with no silk screen labels:

U3 pin 1 (7.76V) CN4 pin 48 CN5 pin 3
U3 pin 2 (7.74V) CN4 pin 47 CN5 pin 4
U3 pin 3 (7.75V) CN4 pin 46 CN5 pin 5
U3 pin 4 (7.74V) CN4 pin 45 CN5 pin 6
U3 pin 5 (7.76V) CN4 pin 44 CN5 pin 7
U3 pin 6 (7.74V) CN4 pin 43 CN5 pin 8
U3 pin 8 (27.9V) CN4 pin 42 CN5 pin 9
U3 pin 9 (-6.97V) CN4 pin 41 CN5 pin 10
U3 pin 10 (-6.95V to 27.9V) CN4 pin 40 CN5 pin 11
U3 pin 11 (-6.95V to 27.9V) CN4 pin 39 CN5 pin 12

Q1

4) 12.98V	3) 16.93V
5) 12.98V	2) 16.38V
6) 27.95V	1) 20.2V

Q2

4) (-7V)	3) (-2.19V)
5) 2.97V	2) 1.18V
6) 2.97V	1) 0.55V

U1 Buffer

Pin
[1] Gnd
[2] Gnd
[3] Gnd
[4] Gnd
[5] 3.31V
[6] 3.31V
[7] 3.31V
[8] 3.31V

Q1 VDD Rectifier

Pin
[1] 20.2V
[2] 16.38V
[3] 16.93V Output
[4] 12.98V
[5] 12.98V
[6] 12.95V

Q2 VGL Rectifier

Pin
[1] 0.56V
[2] 1.18V
[3] (-2.9V)
[4] (-7V) Output
[5] 2.97V
[6] 2.97V

U3 DC-to-DC

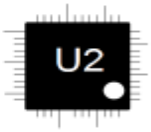
Panel Power
Level Shifter

Pin		Pin	
[1]	7.76V (GCLK1)	[15]	(-6.97) (VGL)
[2]	7.74V (GCLK2)	[16]	27.96V (VGH)
[3]	7.75V (GCLK3)	[17]	27.96V (VGH)
[4]	7.74V (GCLK4)	[18]	7.65V (V_COM)
[5]	7.76V (GCLK5)	[19]	7.65V
[6]	7.74V (GCLK6)	[20]	7.62V
[7]	2.5V	[21]	16.9V
[8]	27.9V (VGH_R)	[22]	Gnd
[9]	(-6.97) (VGH_F)	[23]	3.3V (VCC)
[10]	*(-6.95V to 27.9V) (VGH_ODD)	[24]	0V
[11]	*(-6.95V to 27.9V) (VGH_EVEN)	[25]	0V
[12]	(-6.91) (VST)	[26]	0.7V
[13]	(-6.88) (GIP_RST)	[27]	1.27V
[14]	(-6.97)	[28]	3.24V

* EVERY Second

U2 DC-to-DC

T-CON and Panel Power
DC-to-DC Conv



Pin		Pin	
[1]	1.81V	[25]	4.95V
[2]	1.86V	[26]	0.53V
[3]	Gnd	[27]	3.3V
[4]	3.3V	[28]	3.3V
[5]	1.79V	[29]	4.99V
[6]	1.81V	[30]	1.3V
[7]	Gnd	[31]	16.4V
[8]	3.31V (VCC)	[32]	27.94V
[9]	3.31V (VCC)	[33]	5.69V
[10]	0V	[34]	8.21V
[11]	11.7V (Panel_VCC)	[35]	(-6.98V) (VGL_FB)
[12]	11.7V (Panel_VCC)	[36]	1.19V
[13]	11.7V (Panel_VCC)	[37]	13.86V
[14]	11.7V (Panel_VCC)	[38]	12.85V
[15]	8.45V (H_VDD)	[39]	10.91V
[16]	8.44V (H_VDD_FB)	[40]	6.55V
[17]	Gnd	[41]	4.6V
[18]	Gnd	[42]	3.5V
[19]	Gnd	[43]	7.65V
[20]	11.7V (Panel_VCC)	[44]	7.64V
[21]	11.7V (Panel_VCC)	[45]	7.63V
[22]	16.97V	[46]	7.61V (VCOM_RFB)
[23]	16.97V (VDD)	[47]	1.61V
[24]	Gnd	[48]	Gnd

17) 47LW5600 Interconnect

TV Models: LG 47LS4500_47LV550_47LV5500_47LW5300_47LW5600, LG 47LW5700 , LG 47LW6500

Part Number: 6871L-2411C (Substitute: 6871L-2693A)

T-con Board P/N: 6870C-0358A

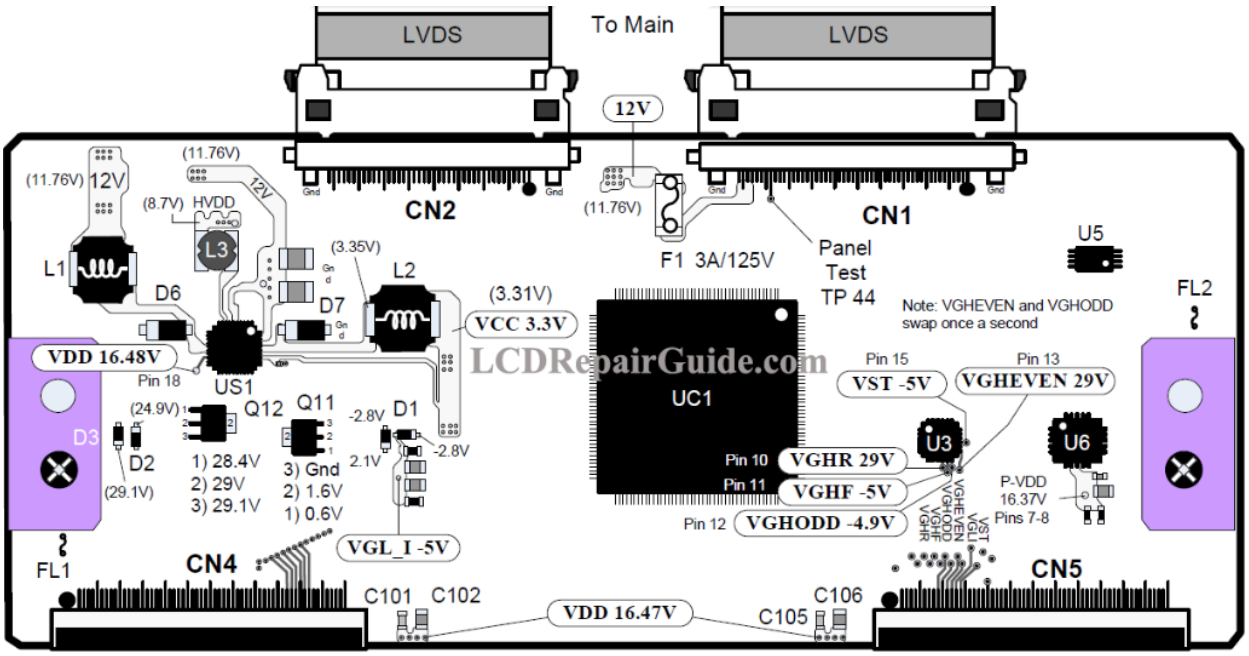
DESC or Panel Sticker Number: LC470EUF-SDF2 (DESC: V6 32/42/47 FHD 120Hz)

Warning:

T-CON Board under shield. Be sure to reinsert screws before operating set with shield removed.

PANEL Test:

To run the T-CON “Panel Test”, remove the LVDS cables. Jump 12V to the 12V fuse. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



Pin 52 VGHR	29V	Pin 48 VGL_I	-5V
Pin 51 VGHF	-5V	Pin 47 VST	-5V
Pin 50 VGHODD	-5V	Pin 35 VCC	3.3V
Pin 49 VGHEVEN	28V	Pin 40,41 VDD	16.48V

Note: VGHEVEN and VGHODD swap once a second

TO TFT MODULE

Pin 9 VGHR	29V	Pin 13 VGL_I	-5V
Pin 10 VGHF	-5V	Pin 14 VST	-5V
Pin 11 VGHODD	-5V	Pin 25 VCC	3.3V
Pin 12 VGHEVEN	28V	Pin 20,21 VDD	16.48V

Note: VGHEVEN and VGHODD swap once a second

Other Voltages from U6 to the Panel with no silk screen labels:

U6 pin 11: (13V) to CN4 pin 3, CN5 pin 58
U6 pin 12: (12.1V) to CN4 pin 4, CN5 pin 57
U6 pin 13: (10.25V) to CN4 pin 5, CN5 pin 56
U6 pin 14: (6.17V) to CN4 pin 8, CN5 pin 53
U6 pin 15: (4.3V) to CN4 pin 9, CN5 pin 52
U6 pin 18: (3.3V) to CN4 pin 10, CN5 pin 51
U6 pin 19: (2.65V) to CN4 pin 11, CN5 pin 50
U6 pin 20: (16.37V) to CN4 pin 40,41, CN5 pin 20, 21

U5

5) Gnd 4) 3.31V
6) Gnd 3) 3.3V
7) Gnd 2) 2.95V
8) Gnd 1) 3.3V

18) 47LX6500 Interconnect

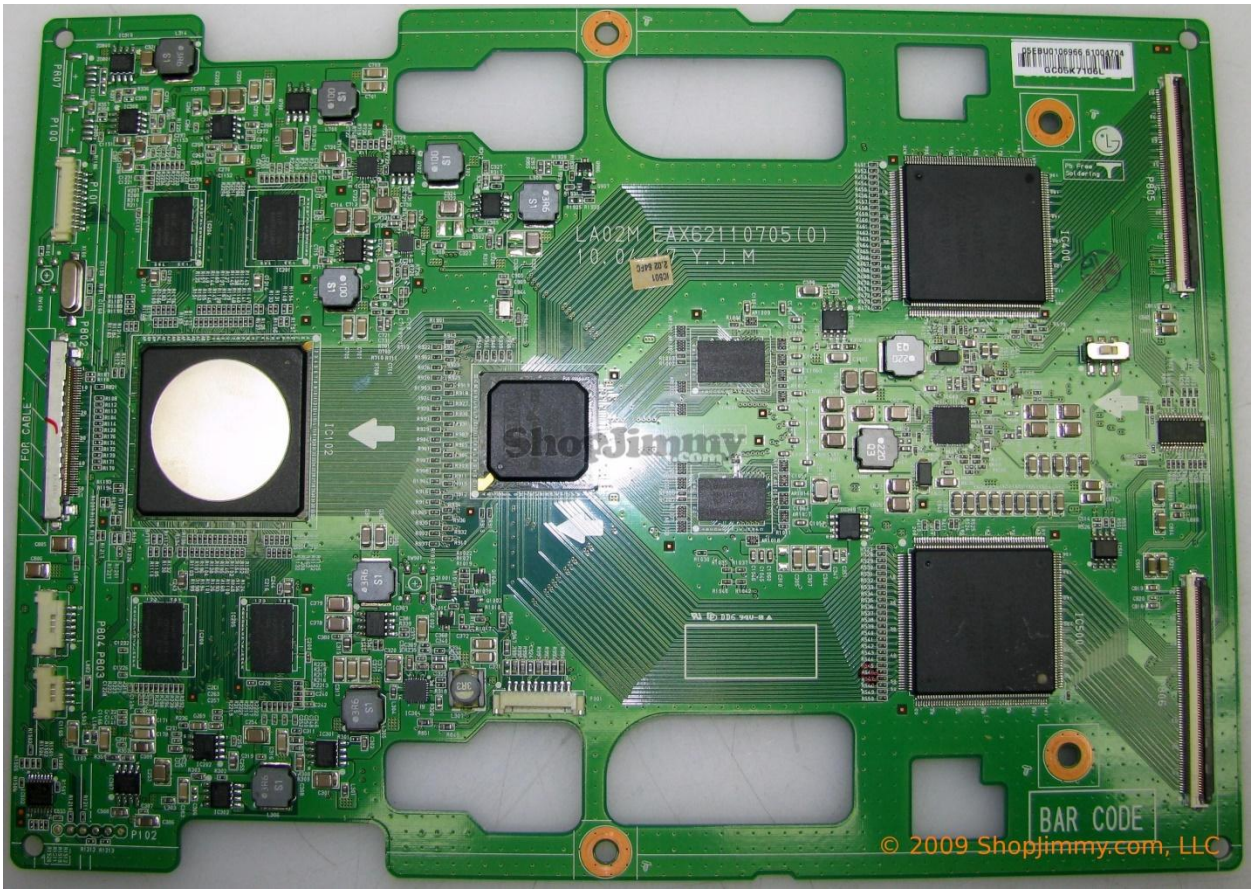
TV Models: LG 47LX6500

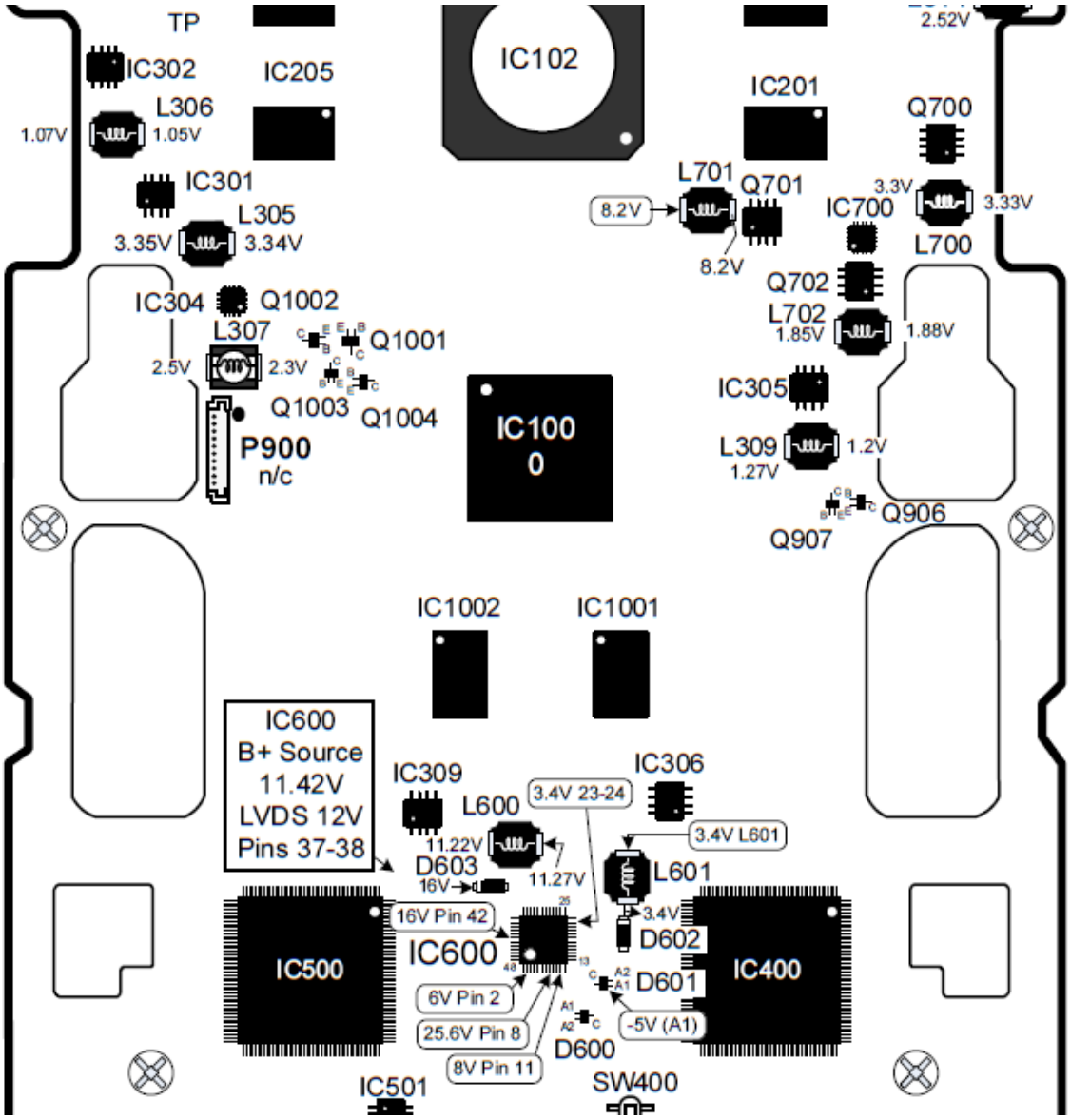
PANEL P/N:

Part Number: EBR61004704

T-con Board P/N: EAX62110705 (0)

DESC or Panel Sticker Number: LC470EUS-SCA1




TP
IC302
IC205
IC102
IC201
Q700
L306
1.07V
1.05V
2.52V
L701
Q701
8.2V
3.3V
IC700
3.33V
IC301
L305
3.35V
3.34V
8.2V
L700
Q702
IC304
Q1002
L702
1.85V
1.88V
L307
Q1001
2.5V
2.3V
IC305
Q1003
Q1004
IC100
0
P900
n/c
L309
1.2V
1.27V
Q906
Q907
IC1002
IC1001
IC600
B+ Source
11.42V
LVDS 12V
Pins 37-38
IC309
L600
3.4V 23-24
IC306
11.22V
3.4V L601
D603
11.27V
L601
16V
16V Pin 42
3.4V
D602
IC500
IC600
IC400
6V Pin 2
D601
25.6V Pin 8
-5V (A1)
D600
8V Pin 11
IC501
SW400

P7800 "MAIN Board" To "T-CON" P802

Pin	Label	Run	Diode
1	PANEL_VCC	12.18V	3.02V
2	PANEL_VCC	12.18V	3.02V
3	PANEL_VCC	12.18V	3.02V
4	PANEL_VCC	12.18V	3.02V
5	n/c	n/c	n/c
6	Gnd	Gnd	Gnd
7	Gnd	Gnd	Gnd
8	Gnd	Gnd	Gnd
9	Gnd	Gnd	Gnd
10	Gnd	Gnd	Gnd
11	RRXB4+	1.09V	0.91V
12	RRXB4-	1.26V	1.08V
13	RRXB3+	1.14V	0.91V
14	RRXB3-	1.22V	1.08V
15	Gnd	Gnd	Gnd
16	RRXBCK+	1.2V	0.91V
17	RRXBCK-	1.16V	1.08V

Pin	Label	Run	Diode
18	Gnd	Gnd	Gnd
19	RRXB2+	1.14V	0.91V
20	RRXB2-	1.2V	1.08V
21	RRXB1+	1.16V	0.91V
22	RRXB1-	1.19V	1.08V
23	RRXB0+	1.19V	0.91V
24	RRXB0-	1.19V	1.08V
25	n/c	n/c	n/c
26	Gnd	Gnd	Gnd
27	RRXA4+	1.08V	0.91V
28	RRXA4-	1.26V	1.08V
29	RRXA3+	1.14V	0.91V
30	RRXA3-	1.2V	1.08V
31	Gnd	Gnd	Gnd
32	RRXACK+	1.2V	0.91V
33	RRXACK-	1.16V	1.08V
34	Gnd	Gnd	Gnd

Pin	Label	Run	Diode
35	RRXA2+	1.14V	0.91V
36	RRXA2-	1.22V	1.15V
37	RRXA1+	1.17V	0.91V
38	RRXA1-	1.19V	1.08V
39	RRXA0+	1.19V	0.91V
40	RRXA0-	1.17V	1.08V
41	n/c	n/c	n/c
42	3D_DIM_2	0.05V	1.03V
43	3D_DIM	0V	1.03V
44	3DTV	0V	Open
45	n/c	n/c	n/c
46	FRC_RESET	3.32V	Open
47	SCL3_3.3V	3.34V	2.99V
48	SDA3_3.3V	3.34V	2.99V
49	V_SYNC	3.33V	1.0V
50	3D_Sync_Out	0.03V	0.99V
51	Gnd	Gnd	Gnd

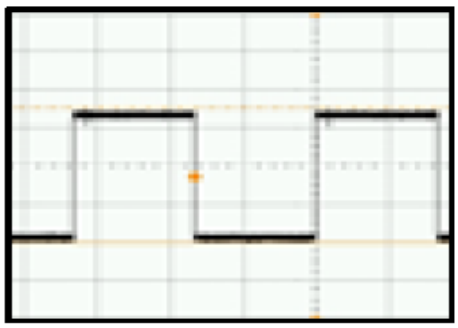
P803 "T-CON" to P7802 "Main"

Pin	LABEL	Run	Diode
1	Panel_VCC	12.18V	Open
2	Panel_VCC	12.18V	Open
3	Gnd	Gnd	Gnd
4	Gnd	Gnd	Gnd

P804 “TCON" to P7803 "Main Board"

Pin	LABEL	Run	Diode
1	Gnd	Gnd	Gnd
2	E_TCK	0V	Open
3	E_TDO	3.29V	Open
4	E_TMS	3.29V	Open
5	E_TDI	3.29V	Open
6	Gnd	Gnd	Gnd

P802 Pin-2 (1.6V) with 3D source 3.32Vp/p 60Hz 3D-Sync:



P805 LVDS to Panel

PIN	LABEL	RUN	PIN	LABEL	RUN	PIN	LABEL	RUN
1	VDD (16V)	16V	28	V6	11.08V	54	RLMVCLKP	1.19V
2	VDD (16V)	16V	29	V7	10.28V	55	RLMVCLKN	1.18V
3	Gnd	Gnd	30	V9	8.31V	56	Gnd	Gnd
4	VCC (3.3V)	3.4V	31	V10	7.71V	57	RLMV4P	1.15V
5	VCC (3.3V)	3.4V	32	V12	3.37V	58	RLMV4N	1.24V
6	Gnd	Gnd	33	V13	4.94V	59	RLMV5P	1.34V
7	HVDD (8V)	8.2V	34	V14	3.75V	60	RLMV5N	1.22V
8	HVDD (8V)	8.2V	35	V15	2.68V	61	RLMV6P	1.12V
9	Gnd	Gnd	36	V16	1.97V	62	RLMV6N	1.23V
10	OPT_P	n/c	37	V17	0.27V	63	Gnd	Gnd
11	VGL (-5V)	(-5V)	38	V18	0.26V	64	RRMV0P	1.13V
12	Gnd	Gnd	39	Gnd	Gnd	65	RRMV0N	1.23V
13	GOE	0.83V	40	GSP	0V	66	RRMV1P	1.15V
14	GSC	2.3V	41	POL	1.66V	67	RRMV1N	1.23V
15	Gnd	Gnd	42	Gnd	Gnd	68	RRMV2P	1.15V
16	VGH (26V)	25.6V	43	SOE_R	0.25V	69	RRMV2N	1.23V
17	Gnd	Gnd	44	H_CONV	0.44V	70	Gnd	Gnd
18	VCOMRFB	6V	45	OPT_N	3.33V	71	RRMVCLKP	1.19V
19	VCOM ROUT	6V	46	Gnd	Gnd	72	RRMVCLKN	1.18V
20	Gnd	Gnd	47	RLMVOP	0.15V	73	Gnd	Gnd
21	Z_OUT	8V	48	RLMVON	0.17V	74	RRMV4P	1.13V
22	Gnd	Gnd	49	RLMV1P	0.14V	75	RRMV4N	1.24V
23	V1	15.75V	50	RLMV1N	1.24V	76	RRMV5P	1.11V
24	V2	15.75V	51	RLMV2P	1.13V	77	RRMV5N	1.12V
25	V3	14V	52	RLMV2N	1.22V	78	RRMV6P	1.12V
26	V4	13.35V	53	Gnd	Gnd	79	RRMV6N	1.22V
27	V5	12.27V				80	Gnd	Gnd

P806 LVDS to Panel

PIN	LABEL	RUN	PIN	LABEL	RUN	PIN	LABEL	RUN
1	Gnd	Gnd	28	Gnd	Gnd	54	V14	3.75V
2	LLMV0P	1.19V	29	LRMV4P	1.15V	55	V15	2.68V
3	LLMV0N	1.24V	30	LRMV4N	1.25V	56	V16	0.27V
4	LLMV1P	1.18V	31	LRMV5P	1.18V	57	V17	0.26V
5	LLMV1N	1.3V	32	LRMV5N	1.26V	58	V18	0.26V
6	LLMV2P	1.15V	33	LRMV6P	1.17V	59	Gnd	Gnd
7	LLMV2N	1.29V	34	LRMV6N	1.25V	60	Gnd	Gnd
8	Gnd	Gnd	35	Gnd	Gnd	61	Z_OUT	8V
9	LLMVCLKP	1.22V	36	OPT_N	3.33V	62	Gnd	Gnd
10	LLMVCLKN	1.23V	37	H_CONV	Gnd	63	VCOMLOUT	6V
11	Gnd	Gnd	38	GSP	0V	64	VCOMLFB	6V
12	LLMV4P	1.18V	39	POL	1.66V	65	Gnd	Gnd
13	LLMV4N	1.26V	40	Gnd	Gnd	66	VGH (26V)	25.6V
14	LLMV5P	1.26V	41	SOE_L	0.24V	67	Gnd	Gnd
15	LLMV5N	1.27V	42	Gnd	Gnd	68	GSC	2.3V
16	LLMV6P	1.16V	43	V1	15.75V	69	GOE	0.83V
17	LLMV6N	1.26V	44	V2	15.75V	70	Gnd	Gnd
18	Gnd	Gnd	45	V3	14V	71	VGL (-5V)	(-5V)
19	LRMV0P	1.17V	46	V4	12.26V	72	Gnd	Gnd
20	LRMV0N	1.28V	47	V5	11.07V	73	HVDD (8V)	8.2V
21	LRMV1P	1.15V	48	V6	11.07V	74	HVDD (8V)	8.2V
22	LRMV1N	1.26V	49	V7	10.27V	75	Gnd	Gnd
23	LRMV2P	1.17V	50	V9	8.31V	76	VCC (3.3V)	3.4V
24	LRMV2N	1.27V	51	V10	5.74V	77	VCC (3.3V)	3.4V
25	Gnd	Gnd	52	V12	Gnd	78	Gnd	Gnd
26	LRMVCLKN	1.21V	53	V13	4.94V	79	VDD (16V)	16V
27	LRMVCLKP	1.23V				80	VDD (16V)	16V

LG 47LX6500 T-CON/3D Components Voltages

IC202

+1.8V DDR Reg

1) Gnd
2) 3.2V
3) 0.09V
4) 0.09V
5) 1.8V
6) 3.34V
7) 1.18V
8) 0.89V

IC203

+1.8V DDRS Reg

1) Gnd
2) 3.27V
3) 0.89V
4) 0.9V
5) 1.8V
6) 3.34V
7) 1.8V
8) 0.9V

IC301

+3.3V Reg

1) 11.41V
2) 3.35V
3) 3.35V
4) 8.77V
5) 3.11V
6) 0.81V
7) 5.02V
8) Gnd

IC302

+1.0V VDC Reg

1) 0.8V
2) Gnd
3) 3.33V
4) 4.26V
5) 3.3V
6) 1.08V
7) 1.08V
8) 3.0V

IC304

+2.5V VQ Reg

1) 0.75V
2) 5.0V
3) Gnd
4) 0V
5) 2.5V
6) 5.0V
7) 7.55V
8) 11.36V
9) 11.36V
10) 11.36V
11) 11.36V
12) 2.55V
13) Gnd
14) Gnd
15) 2.55V
16) Gnd
17) Gnd
18) Gnd
19) Gnd
20) 2.5V
21) 2.5V
22) n/c
23) 0V
24) 2.5V
25) n/c
26) Gnd
27) 1.13V
28) 10.99V

IC306

1V2 Reg

1) n/c
2) 2.5V
3) 2.51V
4) n/c
5) n/c
6) 1.81V
7) 0.81V
8) Gnd

IC307

+1.8V DDR Reg

1) n/c
2) 2.49V
3) 2.51V
4) n/c
5) n/c
6) 1.81V
7) 0.81V
8) Gnd

IC308

+1.8V DDRS Reg

1) n/c
2) 2.47V
3) 2.49V
4) n/c
5) n/c
6) 1.8V
7) 0.8V
8) Gnd

IC600

DC-DC Conv

1) 5.96V
2) 6.03V
3) 3.15V
4) 0.17V
5) 2.72V
6) 3.3V
7) 0V
8) 25.6V
9) 24.7V
10) 1.26V
11) Gnd
12) 5.54V
13) 0V
14) 0V
15) Gnd
16) 0V
17) 1.26V
18) 4.24V
19) Gnd
20) Gnd
21) 1.27V
22) 11.45V
23) 3.4V
24) 3.4V
25) 11.38V
26) 11.38V
27) 11.07V
28) 0V
29) 4.24V
30) 1.9V
31) 0.59V
32) 3.3V
33) 3.13V
34) 0V
35) 0V
36) 0V
37) 11.33V
38) 11.37V
39) n/c
40) n/c
41) 1.27V
42) 16V
43) 5.96V
44) 5.96V
45) 5.96V
46) 5.96V
47) Gnd
48) 5.97V

IC305

1V2 Reg

1) 0.8V
2) Gnd
3) 3.32V
4) 4.32V
5) 3.3V
6) 1.22V
7) 1.22V
8) 2.98V

IC309

DDR VTT Reg

1) Gnd
2) 3.26V
3) 0.89V
4) 0.9V
5) 1.8V
6) 3.34V
7) 1.8V
8) 0.9V

IC310

2V5 Reg

1) 11.41V
2) 2.53V
3) 2.53V
4) 7.97V
5) 3.11V
6) 0.8V
7) 5.07V
8) Gnd

IC701
DC-DC Conv For HVDD

1) Gnd
2) 11.68V
3) 5.26V
4) 0.73V
5) 0.58V
6) 1.97V
7) 0.59V
8) 1.20V
9) Gnd
10) 5.20V
11) 1.40V
12) 13.1V
13) 8.10V
14) 11.68V

IC801
Data Buffer

1) 8.01V
2) 15.7V
3) 15.7V
4) 14.05V
5) 13.35V
6) 12.27V
7) 11.07V
8) Gnd
9) 16.02V
10) 10.28V
11) 8.31V
12) 7.72V
13) 3.33V
14) 3.33V
15) 3.33V
16) Gnd
17) 0V
18) Gnd
19) 4.94V
20) 3.75V
21) 2.67V
22) 16.02V
23) 0V
24) Gnd
25) 0.27V
26) 0.27V
27) 0.25V
28) 5.96V

Q700
+3.3V TCON Reg

1) Gnd
2) 3.26V
3) 3.33V
4) 4.79V
5) 11.42V
6) 11.42V
7) 3.34V
8) 3.34V

Q701
+8.2V HVDD Reg

1) Gnd
2) 1.42V
3) 8.16V
4) 11.7V
5) 11.42V
6) 11.42V
7) 8.2V
8) 8.2V

Q702
+1.8V TCON Reg

1) Gnd
2) 4.27V
3) 1.89V
4) 2.72V
5) 11.41V
6) 11.41V
7) 0V
8) 1.89V

D600

A1) 16V
A2) 25.6V
C) 20.68V

Q803

B) 2.52V
E) 2.52V
C) 2.27V

Q804

B) 2.52V
E) 2.52V
C) 2.27V

Q906

B) 0.61V
E) Gnd
C) 0.03V

Q907

B) 0.0V
E) Gnd
C) 1.9V

Q1001

B) 0V
E) Gnd
C) 1.97V

Q1002

B) 0.6V
E) Gnd
C) 0.02V

Q1003

B) 0.59V
E) Gnd
C) 0.02V

Q1004

B) 0.02V
E) Gnd
C) 3.33V

19) 47LX9500 Interconnect

TV Models: LG 47LX9500

PANEL P/N:

Part Number: EBU0107348, 61004703

T-con Board P/N: EAX61764003(3)

DESC or Panel Sticker Number: LX95M47T480V5 (DESC: LA02M)

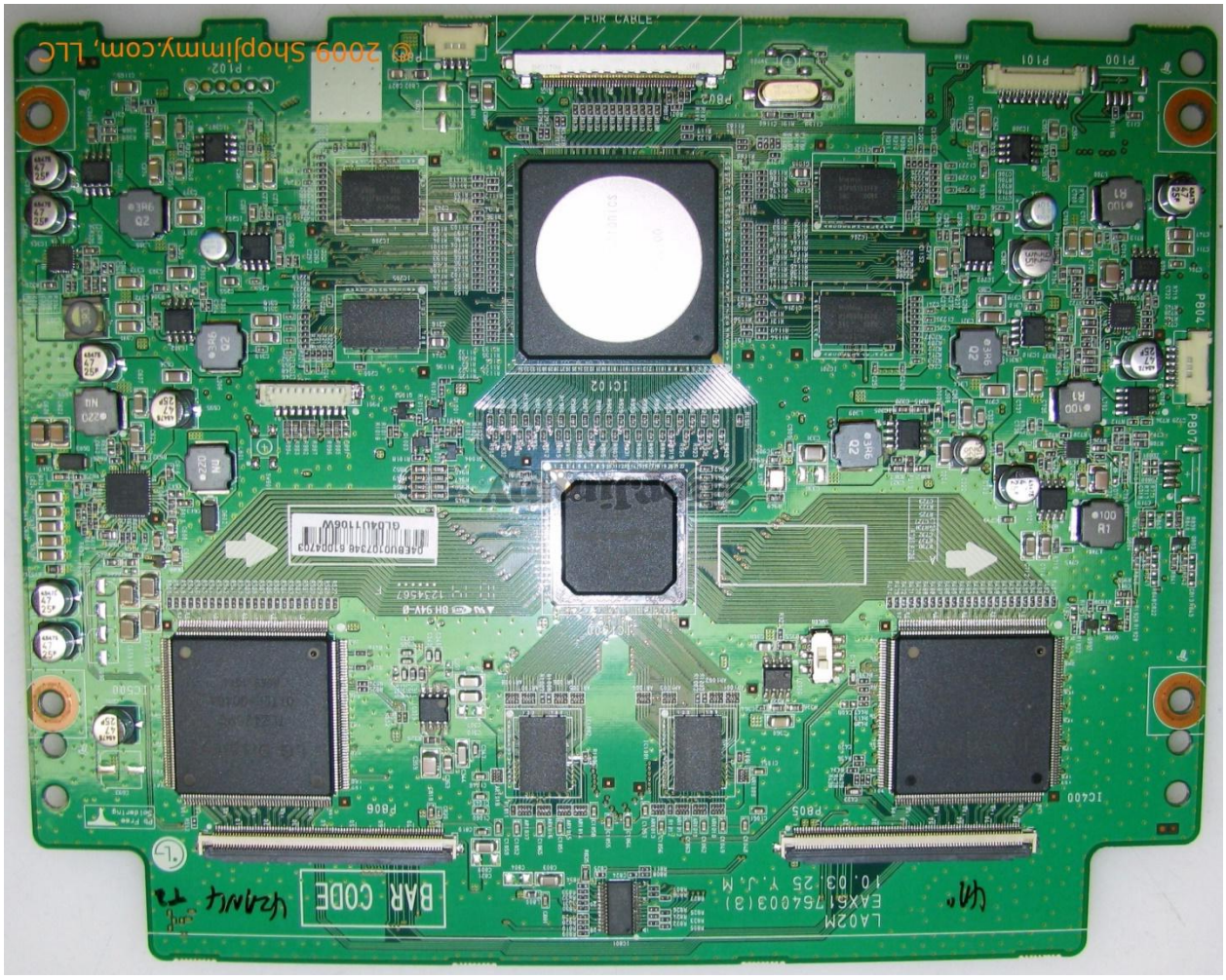
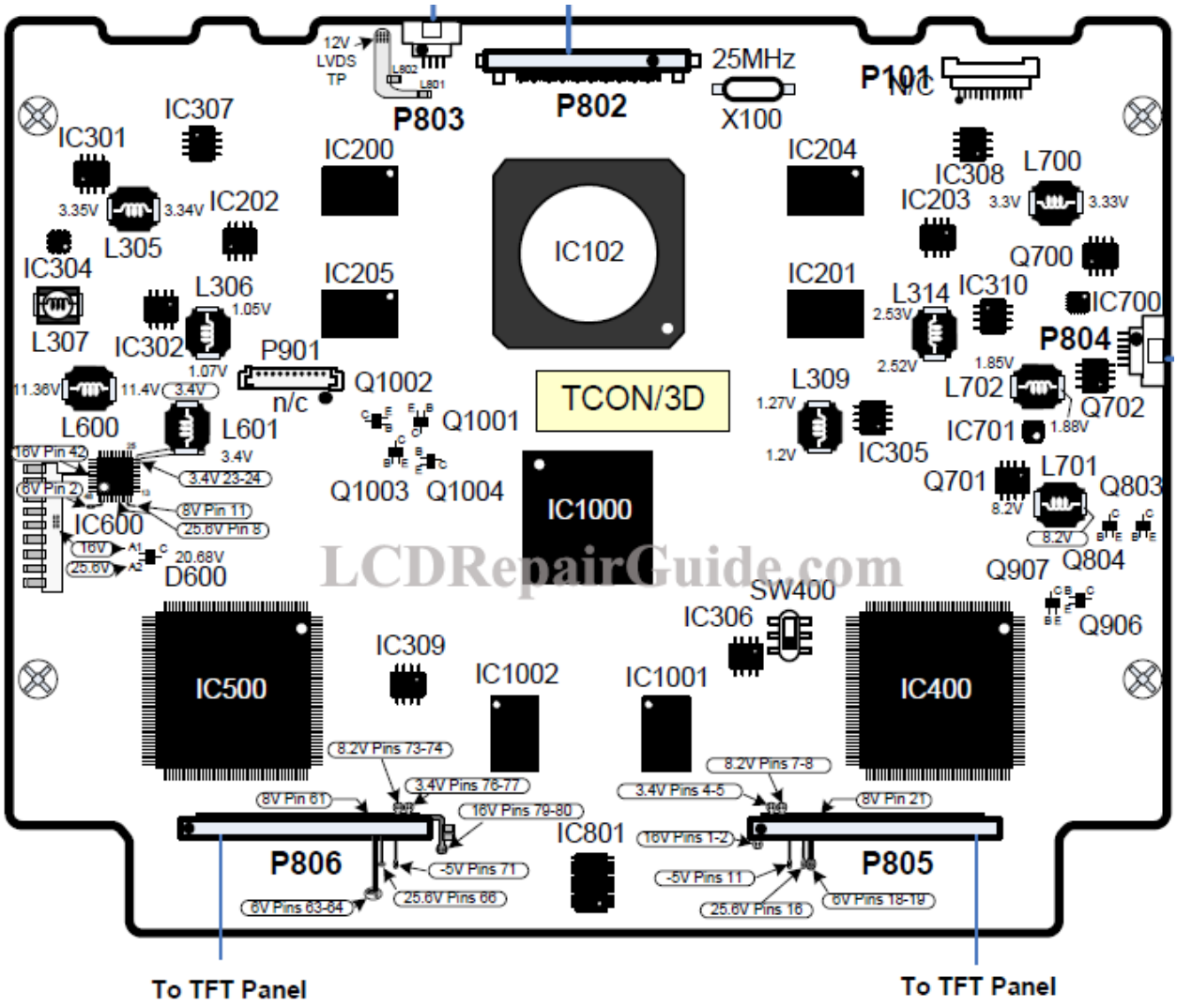


Photo from: Shopjimmy.com



Pin	LABEL	Run	Diode
1	Gnd	Gnd	Gnd
2	E_TCK	0V	Open
3	E_TDO	3.33V	Open
4	E_TMS	0.35V	Open
5	E_TDI	3.32V	Open
6	Gnd	Gnd	Gnd

P804 "T-CON" to P7803 "Mainboard"

Pin	LABEL	Run	Diode Check
1	PANEL_VCC	11.55V	Open
2	PANEL_VCC	11.55V	Open
3	Gnd	Gnd	Gnd
4	Gnd	Gnd	Gnd

P803"T-CON" to P7802 "Mainboard"

P7800 "MAIN Board" To "T-CON" P802

Label	Run	Diode Check	Pin	Label	Run	Diode Check	Pin	Label	Run	Diode Check
PANEL_VCC	11.59V	Open	18	Gnd	Gnd	Gnd	35	RRXA2+	1.14V	0.97V
PANEL_VCC	11.59V	Open	19	RRXB2+	1.14V	0.97V	36	RRXA2-	1.22V	1.15V
PANEL_VCC	11.59V	Open	20	RRXB2-	1.2V	1.15V	37	RRXA1+	1.17V	0.97V
PANEL_VCC	11.59V	Open	21	RRXB1+	1.16V	0.97V	38	RRXA1-	1.19V	1.15V
n/c	n/c	n/c	22	RRXB1-	1.19V	1.15V	39	RRXA0+	1.19V	0.97V
Gnd	Gnd	Gnd	23	RRXB0+	1.19V	0.97V	40	RRXA0-	1.17V	1.15V
Gnd	Gnd	Gnd	24	RRXB0-	1.19V	1.15V	41	n/c	n/c	n/c
Gnd	Gnd	Gnd	25	n/c	n/c	n/c	42	3D_DIM_2	0.05V	1.03V
Gnd	Gnd	Gnd	26	Gnd	Gnd	Gnd	43	3D_DIM	0V	1.03V
Gnd	Gnd	Gnd	27	RRXA4+	1.08V	0.97V	44	3DTV	0V	Open
RRXB4+	1.09V	0.97V	28	RRXA4-	1.26V	1.15V	45	n/c	n/c	n/c
RRXB4-	1.26V	1.15V	29	RRXA3+	1.14V	0.97V	46	FRC_RESET	3.32V	Open
RRXB3+	1.14V	0.97V	30	RRXA3-	1.2V	1.15V	47	SCL3_3.3V	3.34V	1.04V
RRXB3-	1.22V	1.15V	31	Gnd	Gnd	Gnd	48	SDA3_3.3V	3.34V	1.04V
Gnd	Gnd	Gnd	32	RRXACK+	1.2V	0.97V	49	V_SYNC	3.33V	0.998V
RRXBCK+	1.2V	0.97V	33	RRXACK	1.16V	1.15V	*50	3D_Sync_Out	0.03V	Open
RRXBCK	1.16V	1.15V	34	Gnd	Gnd	Gnd	51	Gnd	Gnd	Gnd

P802 Pin-50 Waveform:

*50
(1.6V) with 3D source
5.5V p/p 60 Hz
3D-Sync

P806 LVDS to Panel

PIN	LABEL	RUN	PIN	LABEL	RUN	PIN	LABEL	RUN
1	Gnd	Gnd	28	Gnd	Gnd	54	V14	3.75V
2	LLMV0P	1.19V	29	LRMV4P	1.15V	55	V15	2.68V
3	LLMV0N	1.24V	30	LRMV4N	1.25V	56	V16	0.27V
4	LLMV1P	1.18V	31	LRMV5P	1.18V	57	V17	0.26V
5	LLMV1N	1.3V	32	LRMV5N	1.26V	58	V18	0.26V
6	LLMV2P	1.15V	33	LRMV6P	1.17V	59	Gnd	Gnd
7	LLMV2N	1.29V	34	LRMV6N	1.25V	60	Gnd	Gnd
8	Gnd	Gnd	35	Gnd	Gnd	61	Z_OUT	8V
9	LLMVCLKP	1.22V	36	OPT_N	3.33V	62	Gnd	Gnd
10	LLMVCLKN	1.23V	37	H_CONV	Gnd	63	VCOMLOUT	6V
11	Gnd	Gnd	38	GSP	0V	64	VCOMLFB	6V
12	LLMV4P	1.18V	39	POL	1.66V	65	Gnd	Gnd
13	LLMV4N	1.26V	40	Gnd	Gnd	66	VGH (26V)	25.6V
14	LLMV5P	1.26V	41	SOE_L	0.24V	67	Gnd	Gnd
15	LLMV5N	1.27V	42	Gnd	Gnd	68	GSC	2.3V
16	LLMV6P	1.16V	43	V1	15.75V	69	GOE	0.83V
17	LLMV6N	1.26V	44	V2	15.75V	70	Gnd	Gnd
18	Gnd	Gnd	45	V3	14V	71	VGL (-5V)	(-5V)
19	LRMV0P	1.17V	46	V4	12.26V	72	Gnd	Gnd
20	LRMV0N	1.28V	47	V5	11.07V	73	HVDD (8V)	8.2V
21	LRMV1P	1.15V	48	V6	11.07V	74	HVDD (8V)	8.2V
22	LRMV1N	1.26V	49	V7	10.27V	75	Gnd	Gnd
23	LRMV2P	1.17V	50	V9	8.31V	76	VCC (3.3V)	3.4V
24	LRMV2N	1.27V	51	V10	5.74V	77	VCC (3.3V)	3.4V
25	Gnd	Gnd	52	V12	Gnd	78	Gnd	Gnd
26	LRMVCLKN	1.21V	53	V13	4.94V	79	VDD (16V)	16V
27	LRMVCLKP	1.23V				80	VDD (16V)	16V

P805 LVDS to Panel

PIN	LABEL	RUN	PIN	LABEL	RUN	PIN	LABEL	RUN
1	**VDD (16V)**	16V	28	V6	11.08V	54	RLMVCLKP	1.19V
2	**VDD (16V)**	16V	29	V7	10.28V	55	RLMVCLKN	1.18V
3	Gnd	Gnd	30	V9	8.31V	56	Gnd	Gnd
4	**VCC (3.3V)**	3.4V	31	V10	7.71V	57	RLMV4P	1.15V
5	**VCC (3.3V)**	3.4V	32	V12	3.37V	58	RLMV4N	1.24V
6	Gnd	Gnd	33	V13	4.94V	59	RLMV5P	1.34V
7	**HVDD (8V)**	8.2V	34	V14	3.75V	60	RLMV5N	1.22V
8	**HVDD (8V)**	8.2V	35	V15	2.68V	61	RLMV6P	1.12V
9	Gnd	Gnd	36	V16	1.97V	62	RLMV6N	1.23V
10	OPT_P	n/c	37	V17	0.27V	63	Gnd	Gnd
11	**VGL-(5V)**	(-5V)	38	V18	0.26V	64	RRMV0P	1.13V
12	Gnd	Gnd	39	Gnd	Gnd	65	RRMV0N	1.23V
13	GOE	**0.83V**	40	GSP	0V	66	RRMV1P	1.15V
14	GSC	2.3V	41	POL	1.66V	67	RRMV1N	1.23V
15	Gnd	Gnd	42	Gnd	Gnd	68	RRMV2P	1.15V
16	**VGH (26V)**	25.6V	43	SOE_R	0.25V	69	RRMV2N	1.23V
17	**Gnd**	Gnd	44	H_CONV	0.44V	70	Gnd	Gnd
18	**VCOMRFB**	6V	45	OPT_N	3.33V	71	RRMVCLKP	1.19V
19	**VCOM ROUT**	6V	46	Gnd	Gnd	72	RRMVCLKN	1.18V
20	Gnd	Gnd	47	RLMVOP	0.15V	73	Gnd	Gnd
21	Z_OUT	8V	48	RLMVON	0.17V	74	RRMV4P	1.13V
22	Gnd	Gnd	49	RLMV1P	0.14V	75	RRMV4N	1.24V
23	V1	15.75V	50	RLMV1N	1.24V	76	RRMV5P	1.11V
24	V2	15.75V	51	RLMV2P	1.13V	77	RRMV5N	1.12V
25	V3	14V	52	RLMV2N	1.22V	78	RRMV6P	1.12V
26	V4	13.35V	53	Gnd	Gnd	79	RRMV6N	1.22V
27	V5	12.27V				80	Gnd	Gnd

.

LG 47LX9500 T-CON/3D Component Voltages

IC202
+1.8V DDR Reg
1) Gnd
2) 3.2V
3) 0.09V
4) 0.09V
5) 1.8V
6) 3.34V
7) 1.18V
8) 0.89V

IC203
+1.8V DDRS Reg
1) Gnd
2) 3.27V
3) 0.89V
4) 0.9V
5) 1.8V
6) 3.34V
7) 1.8V
8) 0.9V

IC301
+3.3V Reg
1) 11.41V
2) 3.35V
3) 3.35V
4) 8.77V
5) 3.11V
6) 0.81V
7) 5.02V
8) Gnd

IC302
+1.0V VDC Reg
1) 0.8V
2) Gnd
3) 3.33V
4) 4.26V
5) 3.3V
6) 1.08V
7) 1.08V
8) 3.0V

IC304
+2.5V VQ Reg
1) 0.75V
2) 5.0V
3) Gnd
4) 0V
5) 2.5V
6) 5.0V
7) 7.55V
8) 11.36V
9) 11.36V
10) 11.36V
11) 11.36V
12) 2.55V
13) Gnd
14) Gnd
15) 2.55V
16) Gnd
17) Gnd
18) Gnd
19) Gnd
20) 2.5V
21) 2.5V
22) n/c
23) 0V
24) 2.5V
25) n/c
26) Gnd
27) 1.13V
28) 10.99V

IC305
1V2 Reg
1) 0.8V
2) Gnd
3) 3.32V
4) 4.32V
5) 3.3V
6) 1.22V
7) 1.22V
8) 2.98V

IC306
1V2 Reg
1) n/c
2) 2.5V
3) 2.51V
4) n/c
5) n/c
6) 1.81V
7) 0.81V
8) Gnd

IC307
+1.8V DDR Reg
1) n/c
2) 2.49V
3) 2.51V
4) n/c
5) n/c
6) 1.81V
7) 0.81V
8) Gnd

IC308
+1.8V DDRS Reg
1) n/c
2) 2.47V
3) 2.49V
4) n/c
5) n/c
6) 1.8V
7) 0.8V
8) Gnd

IC309
DDR VTT Reg
1) Gnd
2) 3.26V
3) 0.89V
4) 0.9V
5) 1.8V
6) 3.34V
7) 1.8V
8) 0.9V

IC310
2V5 Reg
1) 11.41V
2) 2.53V
3) 2.53V
4) 7.97V
5) 3.11V
6) 0.8V
7) 5.07V
8) Gnd

IC600 DC-DC Conv

1) 5.96V
2) 6.03V
3) 3.15V
4) 0.17V
5) 2.72V
6) 3.3V
7) 0V
8) 25.6V
9) 24.7V
10) 1.26V
11) Gnd
12) 5.54V
13) 0V
14) 0V
15) Gnd
16) 0V
17) 1.26V
18) 4.24V
19) Gnd
20) Gnd
21) 1.27V
22) 11.45V
23) 3.4V
24) 3.4V
25) 11.38V
26) 11.38V
27) 11.07V
28) 0V
29) 4.24V
30) 1.9V
31) 0.59V
32) 3.3V
33) 3.13V
34) 0V
35) 0V
36) 0V
37) 11.33V
38) 11.37V
39) n/c
40) n/c
41) 1.27V
42) 16V
43) 5.96V
44) 5.96V
45) 5.96V
46) 5.96V
47) Gnd
48) 5.97V

IC700 DC-DC Conv For +3.3V TCON

1) 0.59V
2) 3.3V
3) 3.3V
4) 0V
5) 4.26V
6) Gnd
7) 1.8V
8) 7V
9) 2.7V
10) 4.78V
11) 8.47V
12) 3.33V
13) Gnd
14) 3.6V
15) 0.12V
16) 5.21V
17) 0.6V
18) 1.13V
19) 1.18V
20) Gnd
21) 11.4V
22) 0.56V
23) 0.81V
24) 0.9V

IC801 Data Buffer

1) 8.01V
2) 15.7V
3) 15.7V
4) 14.05V
5) 13.35V
6) 12.27V
7) 11.07V
8) Gnd
9) 16.02V
10) 10.28V
11) 8.31V
12) 7.72V
13) 3.33V
14) 3.33V
15) 3.33V
16) Gnd
17) 0V
18) Gnd
19) 4.94V
20) 3.75V
21) 2.67V
22) 16.02V
23) 0V
24) Gnd
25) 0.27V
26) 0.27V
27) 0.25V
28) 5.96V

IC701 DC-DC Conv For HVDD

1) Gnd
2) 11.68V
3) 5.26V
4) 0.73V
5) 0.58V
6) 1.97V
7) 0.59V
8) 1.20V
9) Gnd
10) 5.20V
11) 1.40V
12) 13.1V
13) 8.10V
14) 11.68V

Q700

+3.3V TCON Reg

1) Gnd
2) 3.26V
3) 3.33V
4) 4.79V
5) 11.42V
6) 11.42V
7) 3.34V
8) 3.34V

Q701

+8.2V HVDD Reg

1) Gnd
2) 1.42V
3) 8.16V
4) 11.7V
5) 11.42V
6) 11.42V
7) 8.2V
8) 8.2V

Q702

+1.8V TCON Reg

1) Gnd
2) 4.27V
3) 1.89V
4) 2.72V
5) 11.41V
6) 11.41V
7) 0V
8) 1.89V

D600

A1) 16V
A2) 25.6V
C) 20.68V

Q803

B) 2.52V
E) 2.52V
C) 2.27V

Q804

B) 2.52V
E) 2.52V
C) 2.27V

Q906

B) 0.61V
E) Gnd
C) 0.03V

Q907

B) 0.0V
E) Gnd
C) 1.9V

Q1001

B) 0V
E) Gnd
C) 1.97V

Q1002

B) 0.6V
E) Gnd
C) 0.02V

Q1003

B) 0.59V
E) Gnd
C) 0.02V

Q1004

B) 0.02V
E) Gnd
C) 3.33V

20) 55EA9800 Interconnect

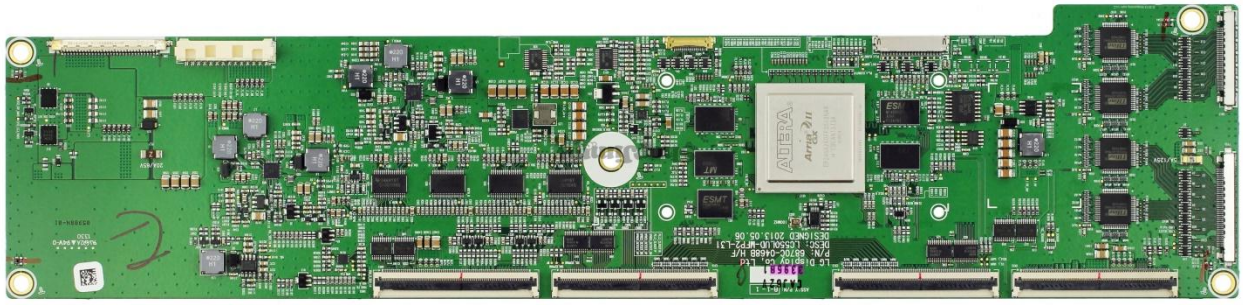
TV Models: LG 55EA9800

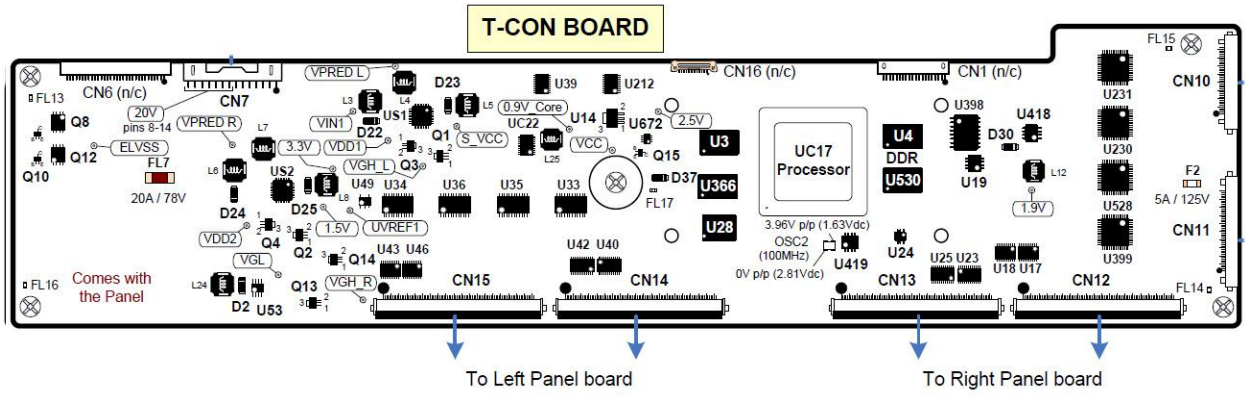
PANEL P/N: EAJ62407601

Part Number: 6871L-3395B

T-con Board P/N: 6870C-0468B

DESC or Panel Sticker Number: LC550LUD-MFP2-L31



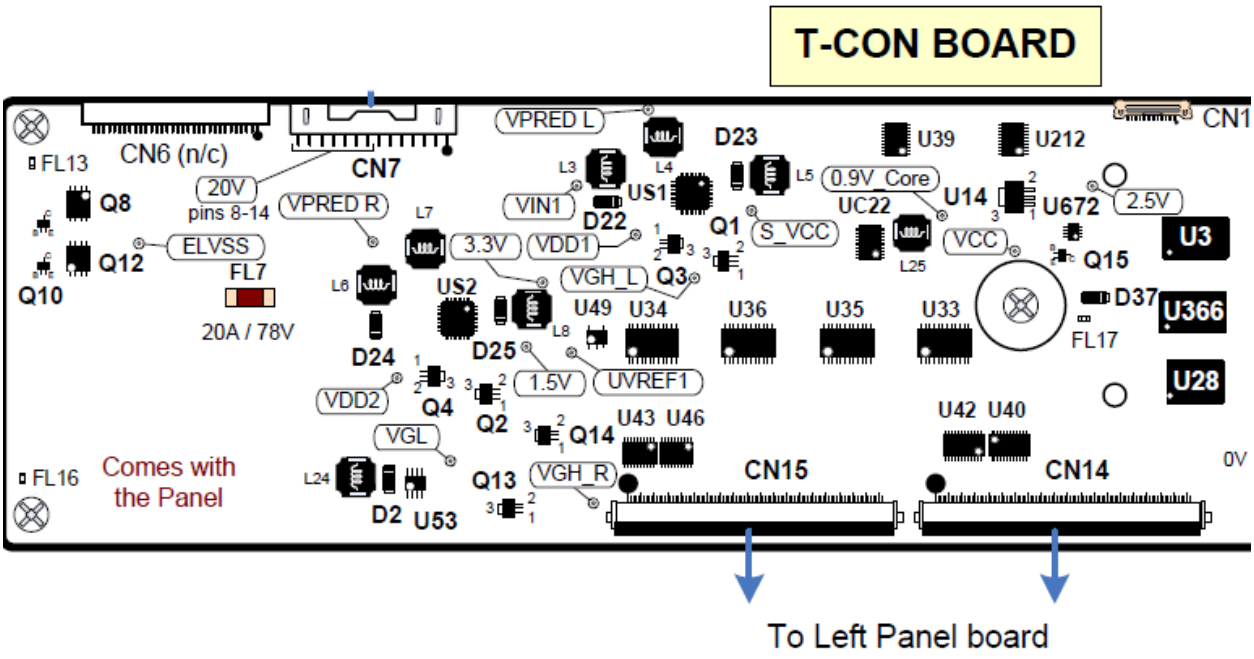


Warning:

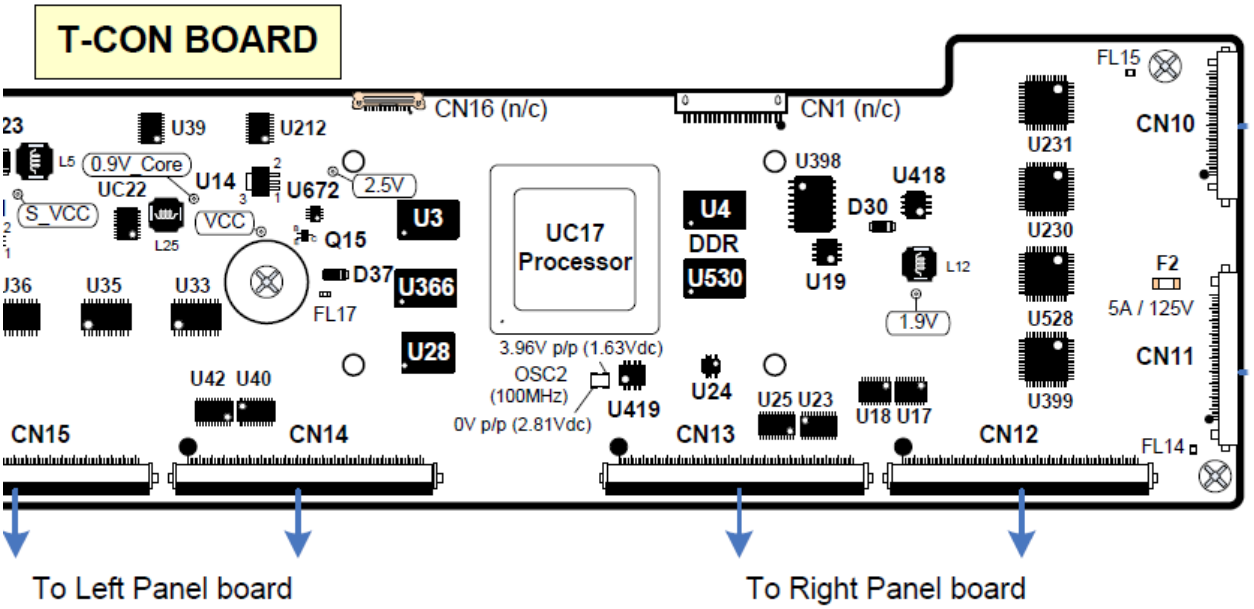
Make sure screws are in place, damage to the board may occur if they are left out. FI13 ~17 are ground protect EMI Filters.

Make sure before reassembling the cover and counter weights that the Heat Transfer materials “Chocolate” are replaced over UC17 and UC33-U36.

Left Side of T-con Board:



Right Side of T-con Board:



T-CON Panel Connector Checks:

CN7 "T-CON" to "SMPS Board" P201

PIN	LABEL	RUN	Diode Check
1-7	Gnd	Gnd	Gnd
8-14	20V	20V	OL

CN15 Connector

Pin 8: 6.54V (From VGH-R)
Pins 10-11: -6.98V (From VGL)
Pin 13: 3.3V (From 3.3V)
Pins 24-38: 20V (From 20V in.)
Pins 39-53: (0V) Not Used (From ELVSS)
Pins 55-56: 1.8V (From S_VCC)
Pins 58-61: 16V (From VDD2)
n/a (From VPRED L
Pins 63-65: 6.54V (From VPRED R)
Pins 67-69: 1.9V (From 1.9V L12)

CN12 Connector

n/a
Pins 85-86: -6.98V
Pin 84: 3.3V
Pins 59-72: 20V
Pins 43-57: (0V) Not Used
Pins 40-41: 1.8V
Pins 34-37: 16V
Pins 30-32: 7.99V
Pins 30-32: 6.54V
Pins 26-28: 1.9V

T-CON Key Voltage Checks:

Name:	Volts:	Name:	Volts:
0.9V_Core	0.94V	VPRED L	7.99V
1.5V	1.5V	VPRED R	6.54V
1.9V	1.9V		
2.5V	2.5V		
3.3V	3.3V		
ELVSS	Not Used		
S_VCC	1.8V		
UVREF1	0.39V		
VCC	3.27V		
VDD1	16.07V		
VDD2	16V		
VGH_L	22.96V		
VGH_R	6.54V		
VGL	(-6.98V)		
VIN1	11.59V		

21) 55GA6400 Interconnect

TV Models: LG 55GA6400

PANEL P/N: EAJ62271001

Part Number: 6871L-3269A

T-con Board P/N: 6870C-0444A

DESC or Panel Sticker Number: LC470DUE-SFR1

Warning:

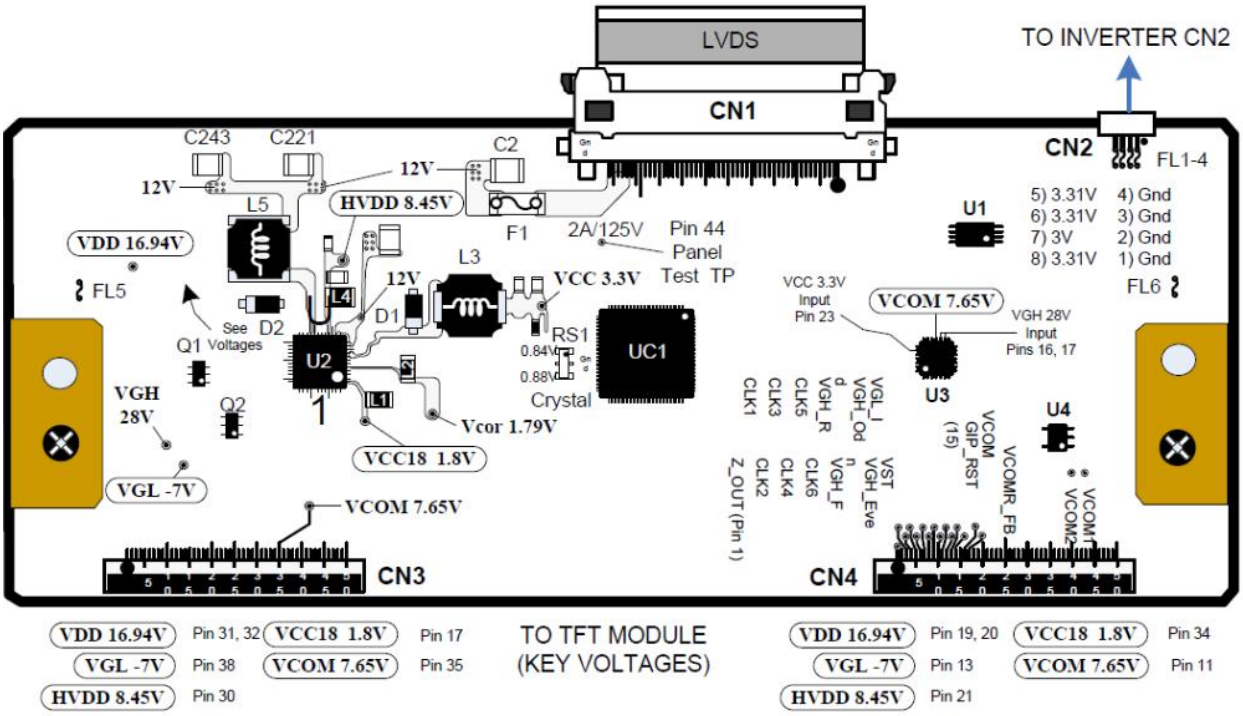
Return the screws when servicing the T-CON board with shields removed.

Note: Concerning Quick Start

If Quick Start is turned on in the Options Menu, T-CON 12V will be available during STBY, but there will be no video to process. Also, no backlights.

PANEL Test:

To run the T-con “Panel Test”, remove the LVDS cable CN1. Jump 12V to the 12V fuse. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



Additional Voltages from U3 to the Panel with no silk screen labels:

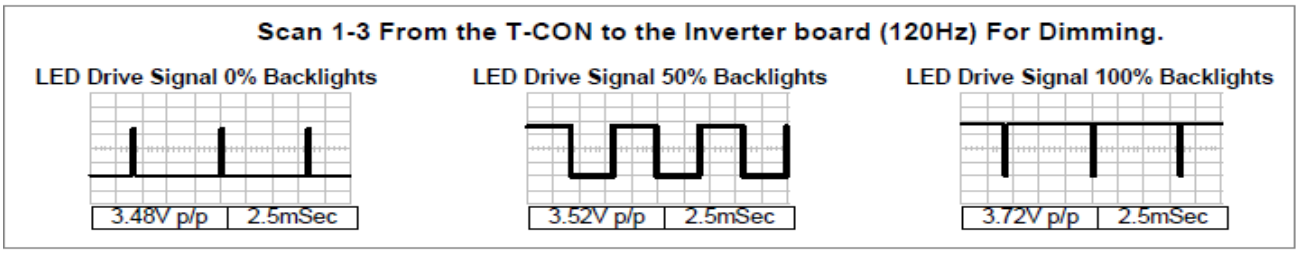
U10 pin 1 (7.76V) CN4 pin 48 CN5 pin 3
U10 pin 2 (7.74V) CN4 pin 47 CN5 pin 4
U10 pin 3 (7.75V) CN4 pin 46 CN5 pin 5
U10 pin 4 (7.74V) CN4 pin 45 CN5 pin 6
U10 pin 5 (7.76V) CN4 pin 44 CN5 pin 7
U10 pin 6 (7.74V) CN4 pin 43 CN5 pin 8
U10 pin 8 (27.9V) CN4 pin 42 CN5 pin 9
U10 pin 9 (-6.97V) CN4 pin 41 CN5 pin 10
U10 pin 10 (-6.95V to 27.9V) CN4 pin 40 CN5 pin 11
U10 pin 11 (-6.95V to 27.9V) CN4 pin 39 CN5 pin 12

Q1		Q2	
4) 12.98V	3) 16.93V	4) (-7V)	3) (-2.19V)
5) 12.98V	2) 16.38V	5) 2.97V	2) 1.18V
6) 27.95V	1) 20.2V	6) 2.97V	1) 0.55V

CN2 Global Dimming

Pin Label **(**Note: Pins are inverted on Inverter)

(1) Scan 1, (2) Scan 2, (3) Scan 3, (4) GND



CN2 "INV Board" to "T-CON" CN2

PIN	LABEL	RUN	Diode Check
1	Gnd	Gnd	Gnd
2	Scan 3	0.14V~3.23V	OL
3	Scan 2	0.14V~3.23V	OL
4	Scan 1	0.14V~3.23V	OL

Note: Used for Dimming, See P-DIM.
Pins are inverted on T-CON

LG 55GA6400 T-CON Board Component Voltages

U3 DC-to-DC

Panel Power
Level Shifter

Pin		Pin	
[1]	7.76V (GCLK1)	[15]	(-6.97) (VGL)
[2]	7.74V (GCLK2)	[16]	27.96V (VGH)
[3]	7.75V (GCLK3)	[17]	27.96V (VGH)
[4]	7.74V (GCLK4)	[18]	7.65V (V_COM)
[5]	7.76V (GCLK5)	[19]	7.65V
[6]	7.74V (GCLK6)	[20]	7.62V
[7]	2.5V	[21]	16.9V
[8]	27.9V (VGH_R)	[22]	Gnd
[9]	(-6.97) (VGH_F)	[23]	3.3V (VCC)
[10]	*(-6.95V to 27.9V) (VGH_ODD)	[24]	0V
[11]	*(-6.95V to 27.9V) (VGH_EVEN)	[25]	0V
[12]	(-6.91) (VST)	[26]	0.7V
[13]	(-6.88) (GIP_RST)	[27]	1.27V
[14]	(-6.97)	[28]	3.24V

* EVERY Second

U2 DC-to-DC

T-CON and Panel Power
DC-to-DC Conv

Pin		Pin	
[1]	1.81V	[25]	4.95V
[2]	1.86V	[26]	0.53V
[3]	Gnd	[27]	3.3V
[4]	3.3V	[28]	3.3V
[5]	1.79V	[29]	4.99V
[6]	1.81V	[30]	1.3V
[7]	Gnd	[31]	16.4V
[8]	3.31V (VCC)	[32]	27.94V
[9]	3.31V (VCC)	[33]	5.69V
[10]	0V	[34]	8.21V
[11]	11.7V (Panel_VCC)	[35]	(-6.98V) (VGL_FB)
[12]	11.7V (Panel_VCC)	[36]	1.19V
[13]	11.7V (Panel_VCC)	[37]	13.86V
[14]	11.7V (Panel_VCC)	[38]	12.85V
[15]	8.45V (H_VDD)	[39]	10.91V
[16]	8.44V (H_VDD_FB)	[40]	6.55V
[17]	Gnd	[41]	4.6V
[18]	Gnd	[42]	3.5V
[19]	Gnd	[43]	7.65V
[20]	11.7V (Panel_VCC)	[44]	7.64V
[21]	11.7V (Panel_VCC)	[45]	7.63V
[22]	16.97V	[46]	7.61V (VCOM_RFB)
[23]	16.97V (VDD)	[47]	1.61V
[24]	Gnd	[48]	Gnd

U1 — Buffer

Pin	
[1]	Gnd
[2]	Gnd
[3]	Gnd
[4]	Gnd
[5]	3.31V
[6]	3.31V
[7]	3.31V
[8]	3.31V

Q1 — VDD Rectifier

Pin	
[1]	20.2V
[2]	16.38V
[3]	16.93V Output
[4]	12.98V
[5]	12.98V
[6]	12.95V

Q2 — VGL Rectifier

Pin	
[1]	0.56V
[2]	1.18V
[3]	(-2.9V)
[4]	(-7V) Output
[5]	2.97V
[6]	2.97V

22) 55LA9700 Interconnect

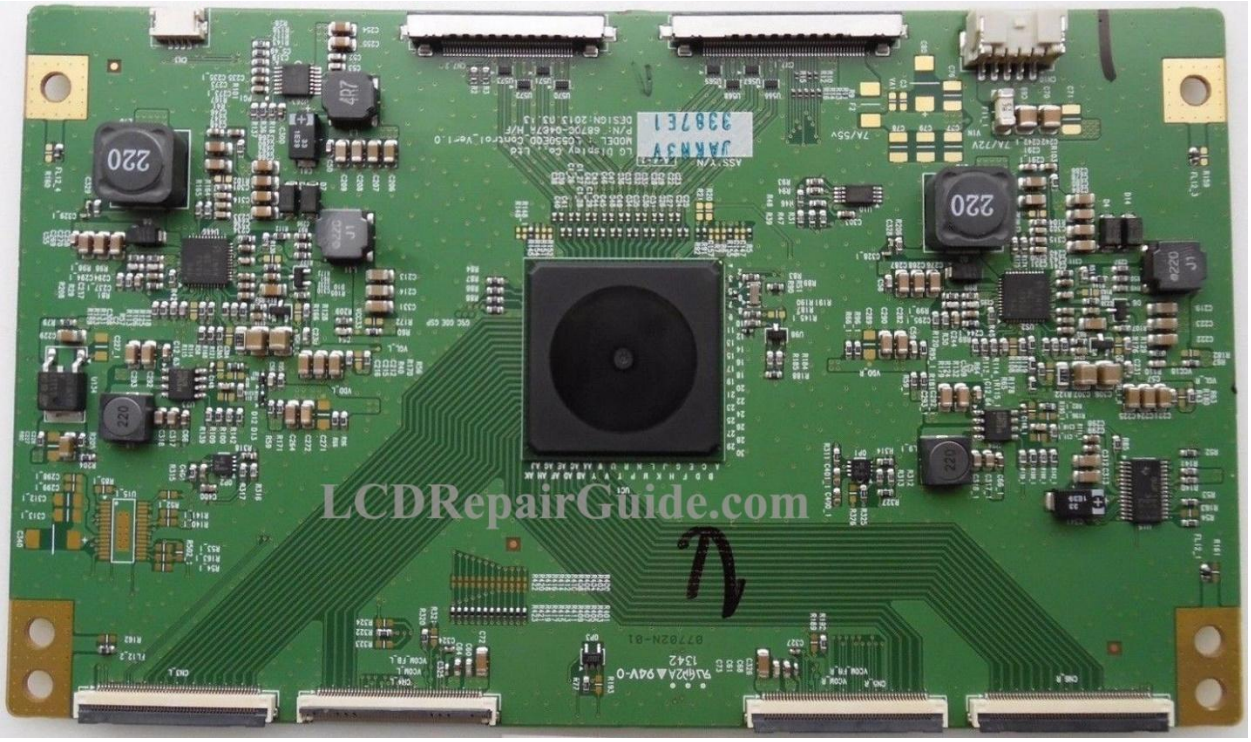
TV Models: LG 55LA9650_55LA9700

PANEL P/N: EAJ73589402

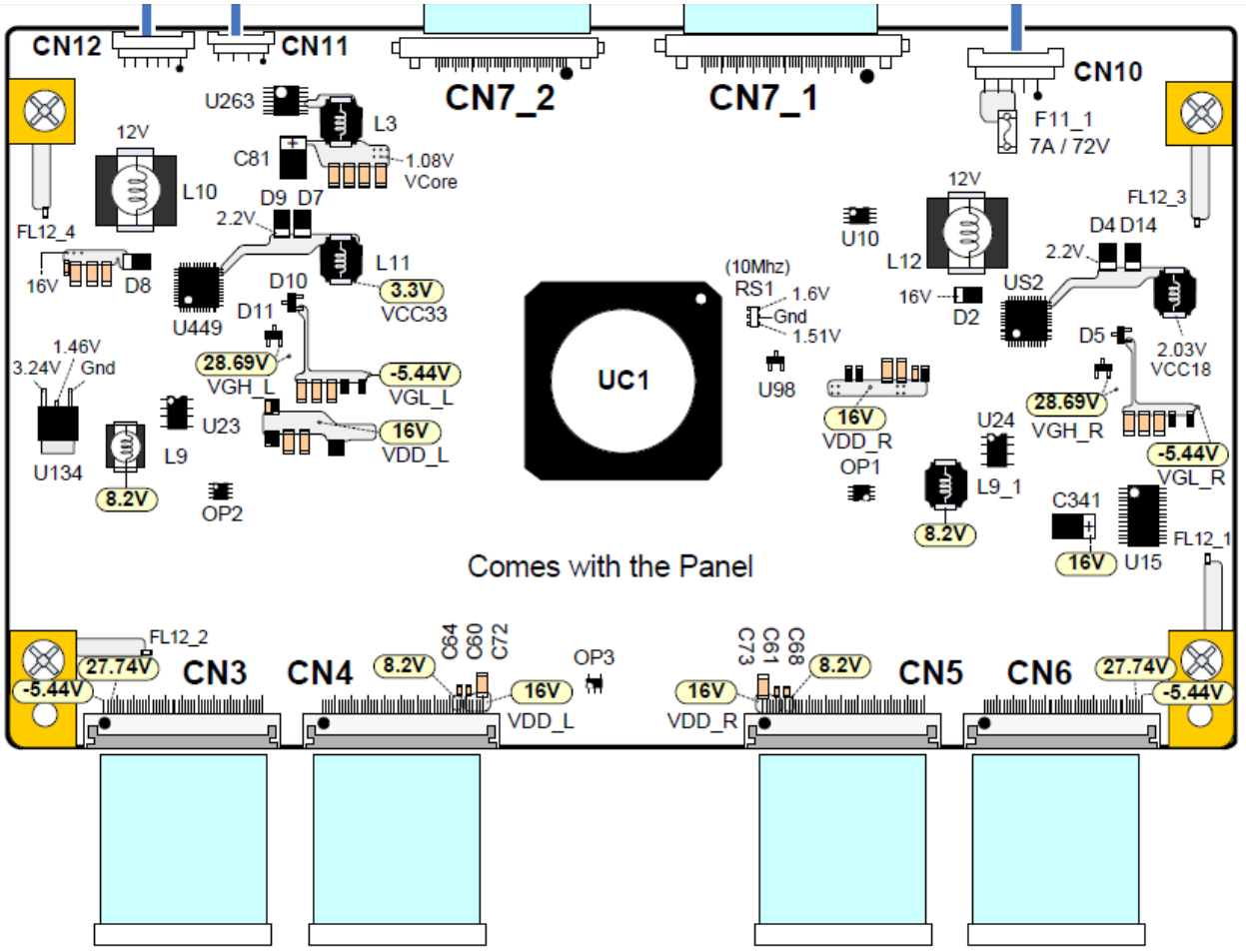
Part Number:

T-con Board P/N: 6870C-0467A

DESC or Panel Sticker Number: LC550EQD



From UHD Board (p/n: EBT62643201)



To the Panel

Pin 1	-5.44V	VGL_L	Pin 39	3.3V	VCC_L	Pin 12	3.3V	VCC_R	Pin 48	27.74V	28V
Pin 3	27.74V	28V	Pin 41-43	8.2V	8V	Pin 8-10	8.2V	8V	Pin 50	-5.44V	VGL_R
			Pin 45-50	16V	VDD_L	Pin 1-6	16V	VDD_R			

CN3, CN4, CN5 and CN6 to the Panel

P1401 "UHD Board" to CN10 "T-CON"

PIN	LABEL	RUN	Diode
1-2	Gnd	Gnd	Gnd
3-5	12V	11.95V	2.09V

CN200 "INV Secondary" to CN11 “T-CON”

PIN	LABEL	RUN	Diode
1	SPI_CLK	1.0V	OL
2	SPI_Data	0.07V	OL
3	Gnd	Gnd	Gnd
4	VSync	0.01V	OL

CN1200 "Inverter Main" to CN12 “T-CON”

PIN	LABEL	RUN	Diode
1-2	N/C	n/c	n/c
3	SPI_Data	0.07V	OL
4	SPI_CLK	1.0V	OL
5	Gnd	Gnd	Gnd
6	VSync	0.01V	OL

23) 55LM6200 Interconnect

TV Models: LG 55LM4600_4700_6200

PANEL P/N: EAJ62088501

Part Number: 6871L-2856C (Substitute: 6871L-2753M)

T-con Board P/N: 6870C-0401B

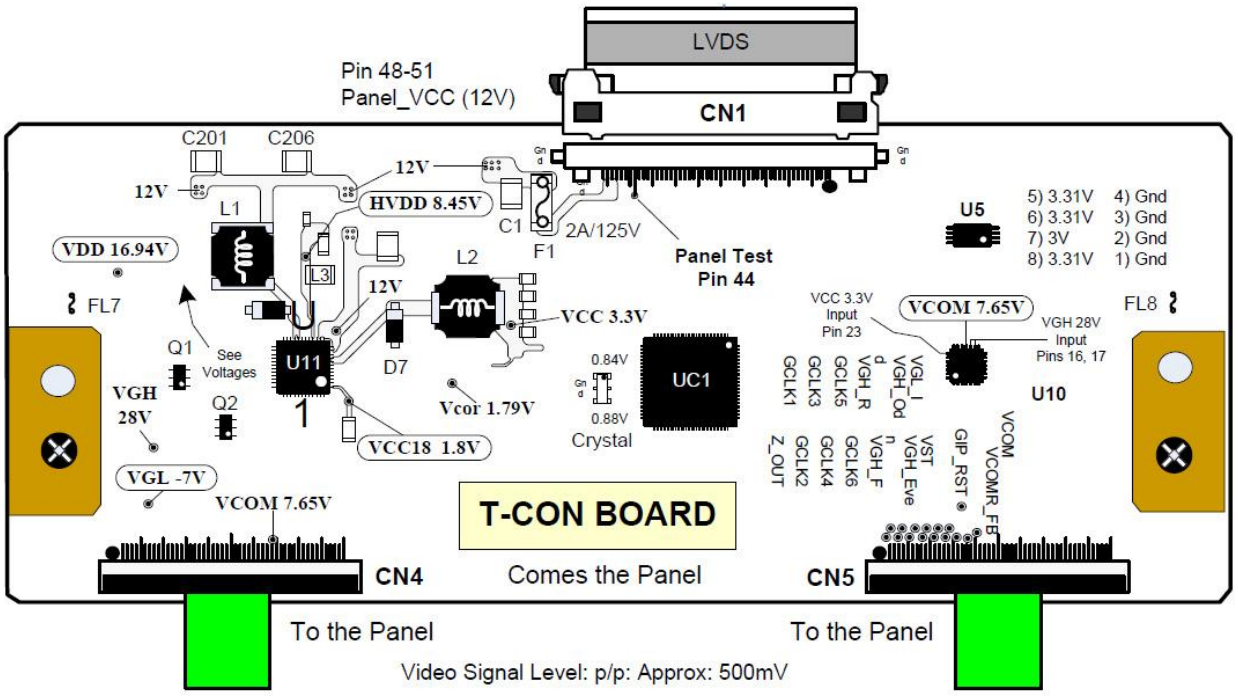
DESC or Panel Sticker Number: LC550EUE-SEF1 (DESC: 32/37/42/47/55 FHD TM120)

Warning:

Return the screws when servicing the T-con board with shields removed.

PANEL TEST:

To run the T-CON “Panel Test”, remove the LVDS cables. Jump 12V to the 12V fuse. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



VDD 16.94V	Pin 31, 32	VCC18 1.8V	Pin 17	VDD 16.94V	Pin 19, 20	VCC18 1.8V	Pin 34
VGL -7V	Pin 38	VCOM 7.65V	Pin 34	VGL -7V	Pin 13	VCOM 7.65V	Pin 17
HVDD 8.45V	Pin 30			HVDD 8.45V	Pin 21		

Additional Voltages from U10 to the Panel with no silk screen labels:

U10 pin 1 (7.76V) CN4 pin 48 CN5 pin 3
U10 pin 2 (7.74V) CN4 pin 47 CN5 pin 4
U10 pin 3 (7.75V) CN4 pin 46 CN5 pin 5
U10 pin 4 (7.74V) CN4 pin 45 CN5 pin 6
U10 pin 5 (7.76V) CN4 pin 44 CN5 pin 7
U10 pin 6 (7.74V) CN4 pin 43 CN5 pin 8
U10 pin 8 (27.9V) CN4 pin 42 CN5 pin 9
U10 pin 9 (-6.97V) CN4 pin 41 CN5 pin 10
U10 pin 10 (*-6.95V to 27.9V) CN4 pin 40 CN5 pin 11
U10 pin 11 (*-6.95V to 27.9V) CN4 pin 39 CN5 pin 12

Changes once a second.

U10 DC-to-DC

Panel Power Level Shifter

Pin		Pin	
[1]	7.76V (GCLK1)	[15]	(-6.97) (VGL)
[2]	7.74V (GCLK2)	[16]	27.96V (VGH)
[3]	7.75V (GCLK3)	[17]	27.96V (VGH)
[4]	7.74V (GCLK4)	[18]	7.65V (V_COM)
[5]	7.76V (GCLK5)	[19]	7.65V
[6]	7.74V (GCLK6)	[20]	7.62V
[7]	2.5V	[21]	16.9V
[8]	27.9V (VGH_R)	[22]	Gnd
[9]	(-6.97) (VGH_F)	[23]	3.3V (VCC)
[10]	*(-6.95V to 27.9V) (VGH_ODD)	[24]	0V
[11]	*(-6.95V to 27.9V) (VGH_EVEN)	[25]	0V
[12]	(-6.91) (VST)	[26]	0.7V
[13]	(-6.88) (GIP_RST)	[27]	1.27V
[14]	(-6.97)	[28]	3.24V

* EVERY Second

U5 Buffer

Pin	
[1]	Gnd
[2]	Gnd
[3]	Gnd
[4]	Gnd
[5]	3.31V
[6]	3.31V
[7]	3.31V
[8]	3.31V

Q1 VDD Rectifier

Pin	
[1]	20.2V
[2]	16.38V
[3]	16.93V Output
[4]	12.98V
[5]	12.98V
[6]	12.95V

Q2 VGL Rectifier

Pin	
[1]	0.56V
[2]	1.18V
[3]	(-2.9V)
[4]	(-7V) Output
[5]	2.97V
[6]	2.97V

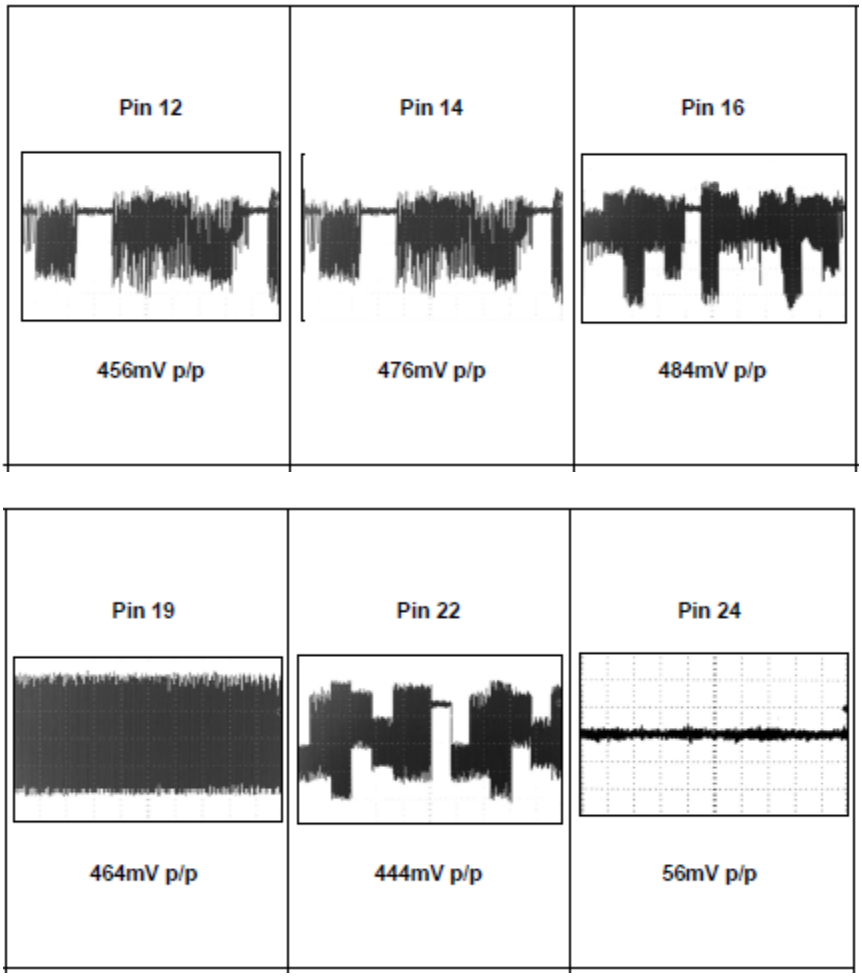
U11 DC-to-DC

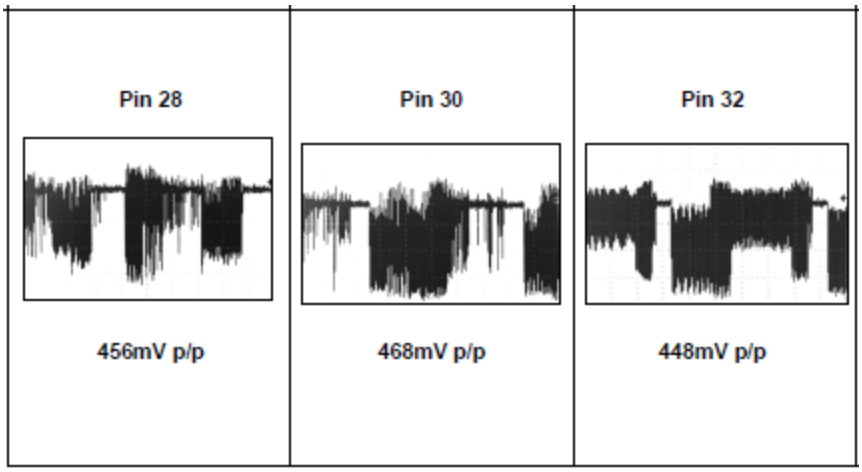
T-CON and Panel Power DC-to-DC Conv	

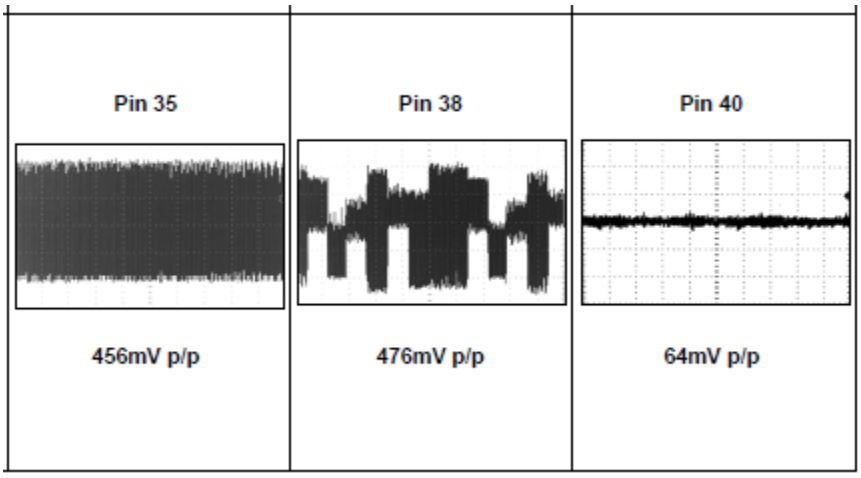
Pin		Pin	
[1]	1.81V	[25]	4.95V
[2]	1.86V	[26]	0.53V
[3]	Gnd	[27]	3.3V
[4]	3.3V	[28]	3.3V
[5]	1.79V	[29]	4.99V
[6]	1.81V	[30]	1.3V
[7]	Gnd	[31]	16.4V
[8]	3.31V (VCC)	[32]	27.94V
[9]	3.31V (VCC)	[33]	5.69V
[10]	0V	[34]	8.21V
[11]	11.7V (Panel_VCC)	[35]	(-6.98V) (VGL_FB)
[12]	11.7V (Panel_VCC)	[36]	1.19V
[13]	11.7V (Panel_VCC)	[37]	13.86V
[14]	11.7V (Panel_VCC)	[38]	12.85V
[15]	8.45V (H_VDD)	[39]	10.91V
[16]	8.44V (H_VDD_FB)	[40]	6.55V
[17]	Gnd	[41]	4.6V
[18]	Gnd	[42]	3.5V
[19]	Gnd	[43]	7.65V
[20]	11.7V (Panel_VCC)	[44]	7.64V
[21]	11.7V (Panel_VCC)	[45]	7.63V
[22]	16.97V	[46]	7.61V (VCOM_RFB)
[23]	16.97V (VDD)	[47]	1.61V
[24]	Gnd	[48]	Gnd

LG 55LM6200 P7100 LVDS Connector Video Waveforms:

All LVDS signals are taken with SMPTY Color Bar signal input (1080P) Component Input. All LVDS signals are “Differential Pairs”. The ones shown are the “Positive” signal of the pair. The Negative signal looks exactly the same but flipped 180 degree. Scope Setting are 100mV per/division, 2.5uSec per/division.




Pin 28
456mV p/p
Pin 30
468mV p/p
Pin 32
448mV p/p


Pin 35
456mV p/p
Pin 38
476mV p/p
Pin 40
64mV p/p

24) 55LM8600 Interconnect

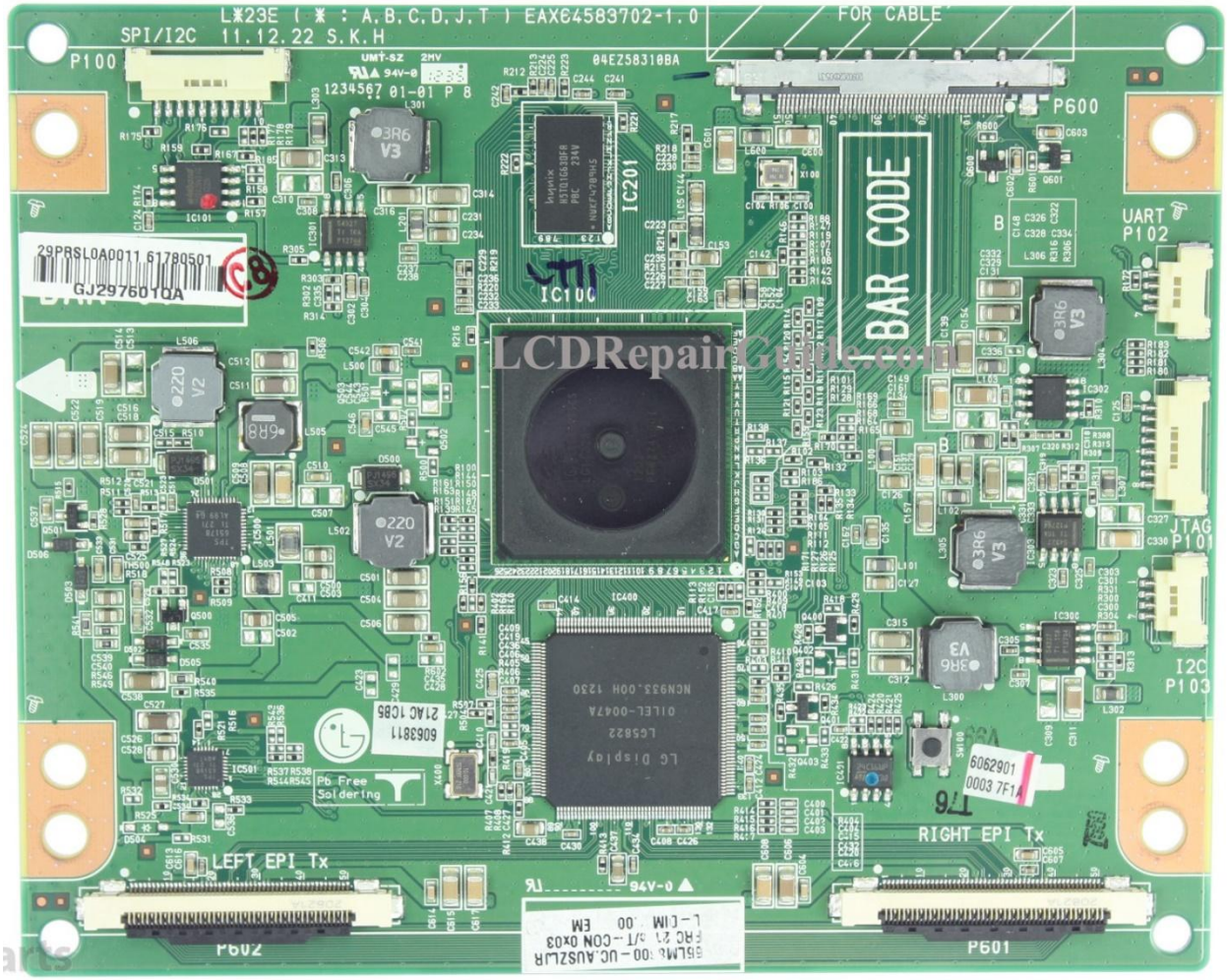
TV Models: LG 55LM8600

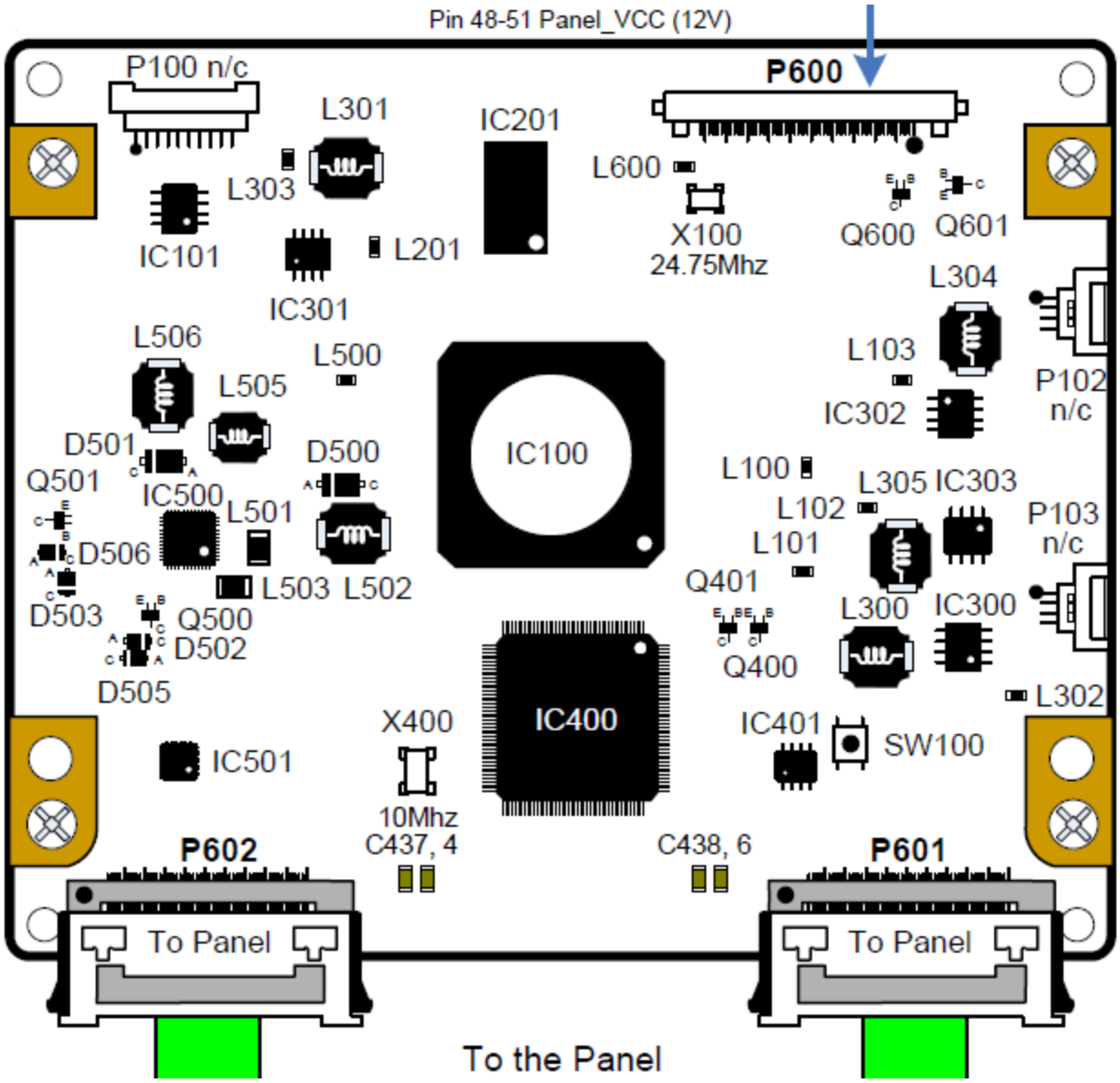
PANEL P/N: AFB73409602 or EAJ62128801

Part Number: EBR61780501

T-con Board P/N: EAX64583702-1.0

DESC or Panel Sticker Number: LC550EUH-PEF1





DC Voltages to the Panel developed on the T-CON

Output from P602	Output from P601
Pin 17 VCC_18 (1.8V)	Pin 34 VCC_18 (1.8V)
Pin 30 H_VDD (8.48V)	Pin 21 H_VDD (8.48V)
Pin 31, 32 VDD (16.92V)	Pin 19, 20 VDD (16.92V)
Pin 37 VST (-5V)	Pin 14 VST (-5V)
Pin 39 VGH_EVEN *(-5V to 28V)	Pin 12 VGH_EVEN *(-5V to 28V)
Pin 40 VGH_ODD *(-5V to 28V)	Pin 11 VGH_ODD *(-5V to 28V)

Changes once a second.

T-CON Board Key Voltages

VCC_18 = 1.8V (IC500 pin-1)

H_VDD= 8.48V (IC500 pin-25)

VDD = 16.92V (IC500 pin-23)

VST = -5V (IC501 pin-12)

VGH_EVEN * = -5V to 28V (IC500 pin-11)

VGH_ODD * = -5V to 28V (IC500 pin-10)

IC101

1) 3.29V
2) 0.13V
3) 0V
4) Gnd
5) 0V
6) 0V
7) 3.28V
8) 3.28V

IC300

1) 11.32V
2) 0.78V
3) 5.46V
4) 5.43V
5) Gnd
6) 1.81V
7) 7.2V
8) 11.64V

IC301

1) 3.2V
2) 0.77V
3) 3.44V
4) 3.4V
5) Gnd
6) 1.52V
7) 6.89V
8) 11.65V

IC302

1) Gnd
2) 11.64V
3) Gnd
4) 0.8V
5) 0.75V
6) 3/22V
7) 1V
8) 1V

IC303

1) 11.32V
2) 0.77V
3) 5.44V
4) 5.4V
5) Gnd
6) 3.28V
7) 8.64V
8) 11.64V

IC401

1) Gnd
2) Gnd
3) Gnd
4) Gnd
5) 3.31V
6) 3.31V
7) 3.3V
8) 3.31V

Q400

B) 3.26V
E) 3.28V
C) 3.31V

Q401

B) 0V
E) 3.28V
C) 3.31V

Q500

B) 0.25V
E) Gnd
C) 4.53V

Q501

B) 16.25V
E) 16.93V
C) 13.13V

Q600

B) 3.28V
E) 3.28V
C) 3.29V

Q601

B) 3.28V
E) 3.28V
C) 3.29V

D500

A) Gnd
C) 3.32V

D501

A) 16.95V
C) 11.62V

D502

A) (0.45V)
C) 4.53V

D503

A) 20.27V
C) 27.97V

D505

A) (-5.09V)
C) (-0.46V)

D506

A) 13.13V
C) 20.27V

DC-DC Conv **IC500** On T-CON

1) 1.8V
2) 1.81V
3) 3.27V
4) 3.31V
5) 1.01V
6) 1.03V
7) Gnd
8) 3.32V
9) 3.32V
10) n/c
11) 11.62V
12) 11.62V
13) 11.02V
14) 11.62V
15) 8.48V
16) 8.48V
17) Gnd
18) Gnd
19) Gnd
20) 11.6V
21) 11.6V
22) 16.94V
23) 16.93V
24) Gnd
25) 4.96V
26) 0.5V
27) 3.28V
28) 3.28V
29) 4.99V
30) 1.41V
31) 16.28V
32) 27.96V
33) 8.2V
34) 3.62V
35) (-5.08V)
36) 0.25V
37) 13.85V
38) 12.83V
39) 10.9V
40) 6.54V
41) 4.59V
42) 3.5V
43) 7.57V
44) 7.54V
45) 7.55V
46) 7.5V
47) 1.97V
48) Gnd

DC-DC Conv **IC501** On T-CON

1) 6.04V
2) 6.04V
3) 6.05V
4) 6.04V
5) 6.04V
6) 6.04V
7) 5.08V
8) 27.93V
9) (-5V)
10) 27.9V to (-5V)
11) 27.9V to (-5V)
12) (-5V)
13) 0V
14) (-5.08V)
15) (-5.08V)
16) (-5.08V)
17) 27.96V
18) 27.96V
19) 7.57V
20) 7.54V
21) 16.92V
22) Gnd
23) 3.2V
24) 0V
25) 0V
26) 0.06V
27) 0V
28) 2.71V

L100
1) 1.8V
2) 1.8V

L101
1) 1.8V
2) 1.8V

L102
1) 3.28V
2) 3.28V

L103
1) 0.95V
2) 0.97V

L201
1) 1.51V
2) 1.51V

L302
1) 11.67V
2) 11.67V

L303
1) 11.66V
2) 11.66V

L307
1) 1.8V
2) 1.8V

L500
1) 11.64V
2) 11.65V

L501
1) 1.01V
2) 1.03V

L503
1) 1.80V
2) 1.81V

L600
1) 11.64V
2) 11.65V

25) 55LW5700 Interconnect

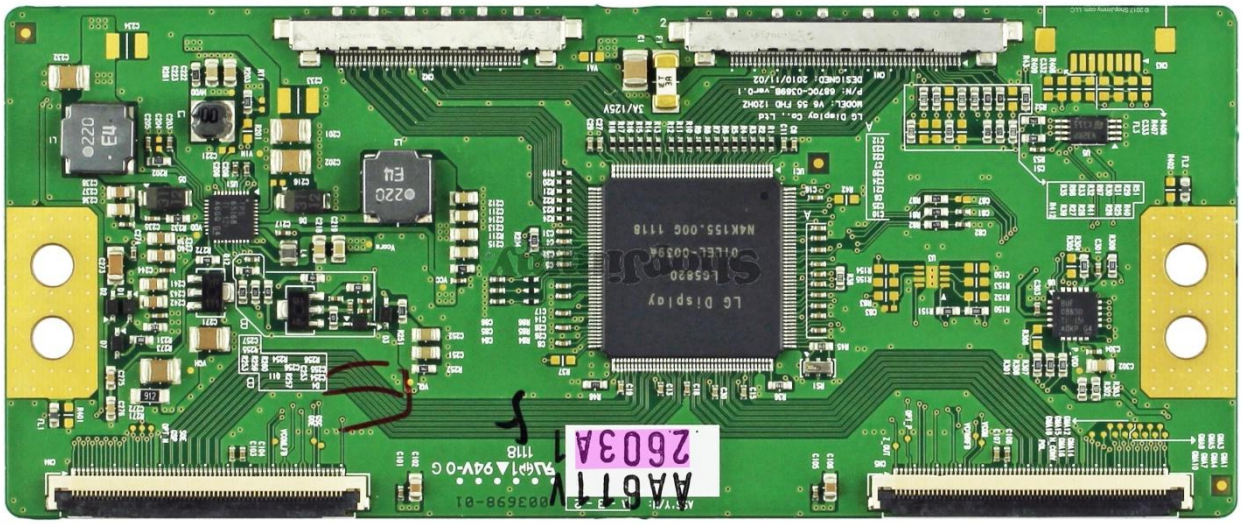
TV Models: LG 55LW5600_5700_6500

PANEL P/N:

Part Number: 6871L-2603A

T-con Board P/N: 6870C-0369B

DESC or Panel Sticker Number: LC550EUF-SDF1 (DESC: V6 55 FHD 120Hz)

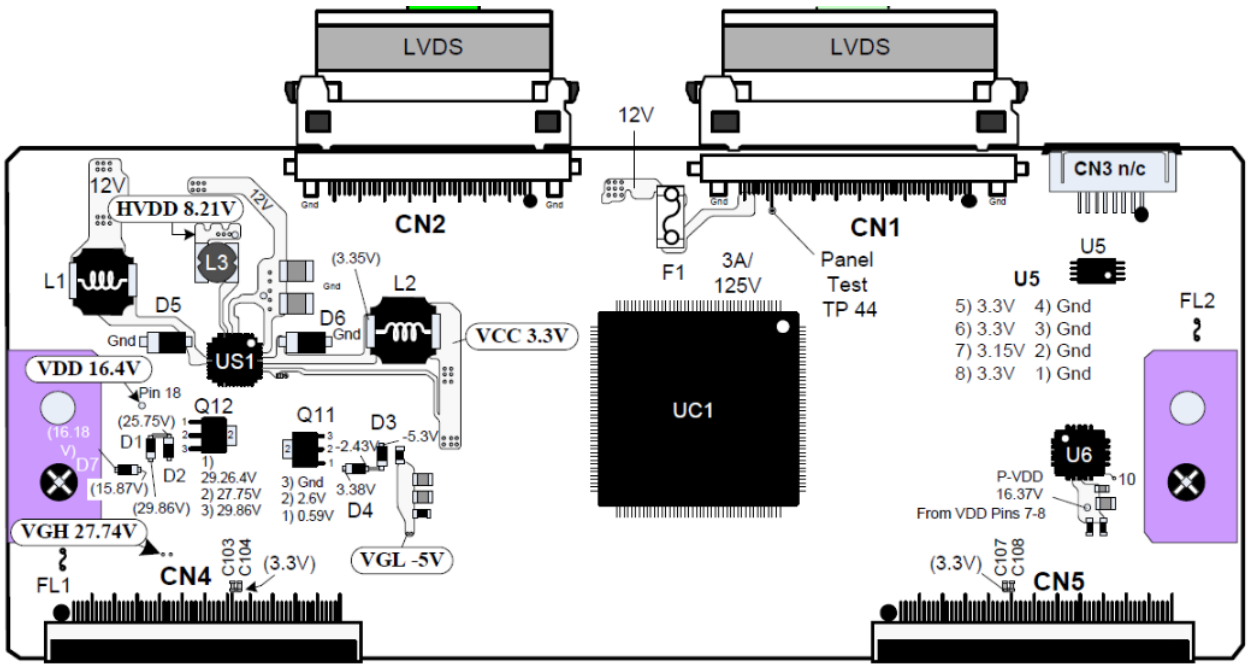


Warning:

T-Con board under shield. Be sure to reinsert screws before operating set with shield removed.

Panel Test:

To run the T-con “Panel Test”, remove the LVDS cables. Jump 12V to the 12V fuse. Jump VCC 3.3V to pin-44 on CN1. White, Red, Blue, Green and Black patterns show on screen.



Pin 51, 52 VGH	27.74V	Pin 35, 36 VCC	3.3V
Pin 47, 48 VGL	-5.3V	Pin 40, 41 VDD	16.4V
Pin 38, 39 HVDD	8.21V		

TO TFT MODULE

Pin 9, 10 VGH	27.74V	Pin 25, 26 VCC	3.3V
Pin 13, 14 VGL	-5V	Pin 20, 21 VDD	16.4V
Pin 22, 23 HVDD	8.21V		

Other Voltages from U6 to the Panel with no silk screen labels:

U6 pin 10: (16.12V) to CN4 pin 2, CN5 pin 59
U6 pin 11: (13.3V) to CN4 pin 3, CN5 pin 58
U6 pin 12: (12.2V) to CN4 pin 4, CN5 pin 57
U6 pin 13: (10.26V) to CN4 pin 5, CN5 pin 56
U6 pin 14: (5.9V) to CN4 pin 8, CN5 pin 53
U6 pin 15: (4.05V) to CN4 pin 9, CN5 pin 52
U6 pin 18: (3.01V) to CN4 pin 10, CN5 pin 51
U6 pin 19: (2.36V) to CN4 pin 11, CN5 pin 50

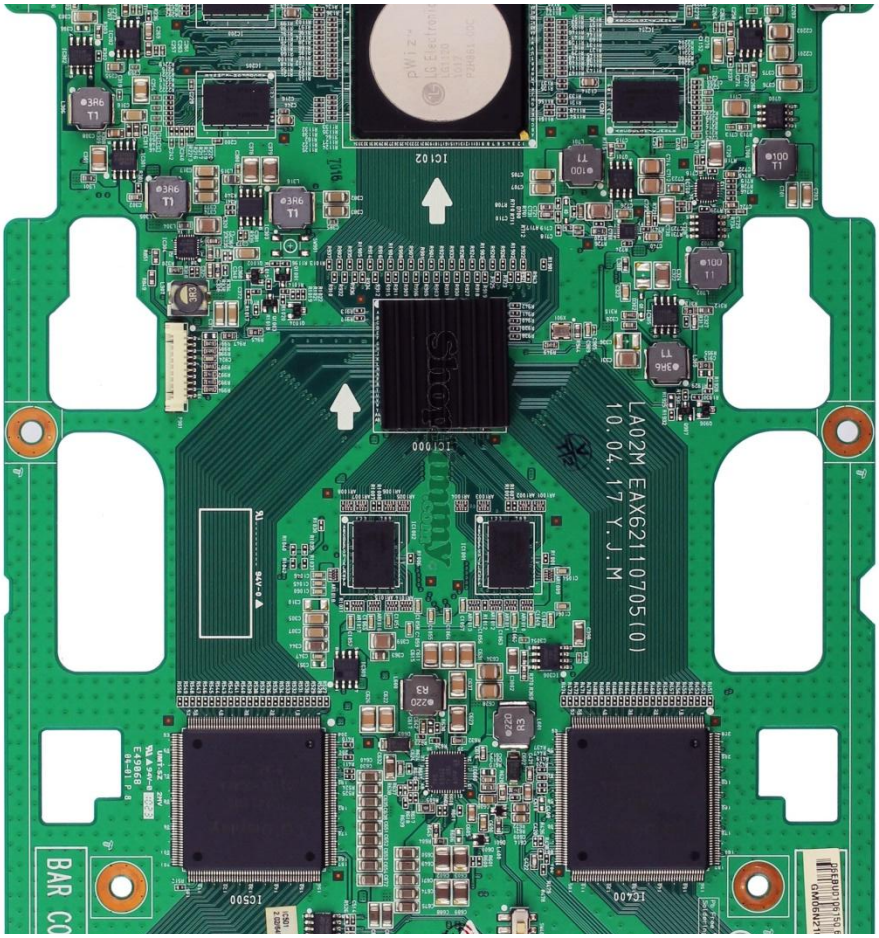
26) 55LX6500 Interconnect

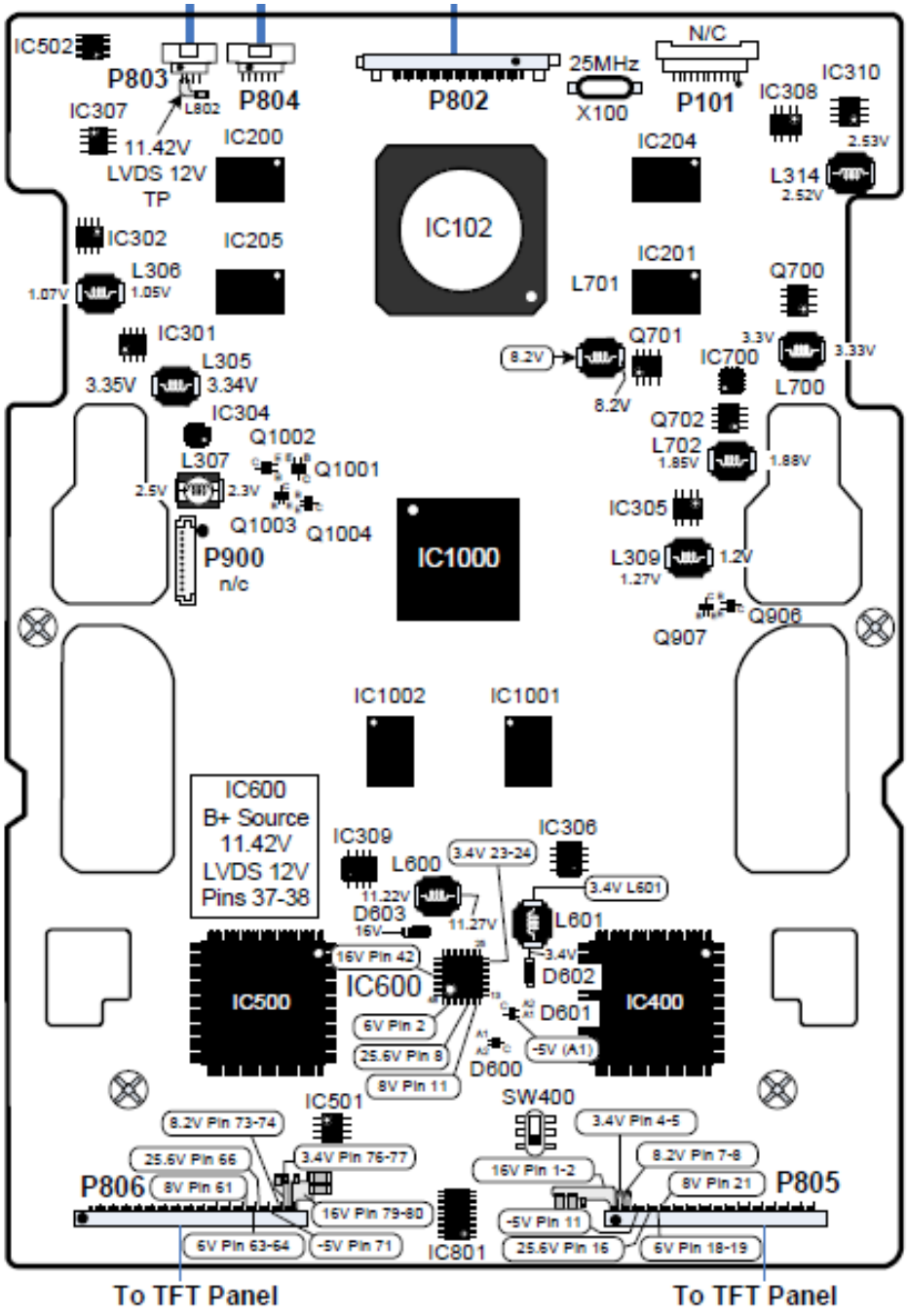
TV Models: LG 55LX6500

Part Number: EBU61004702

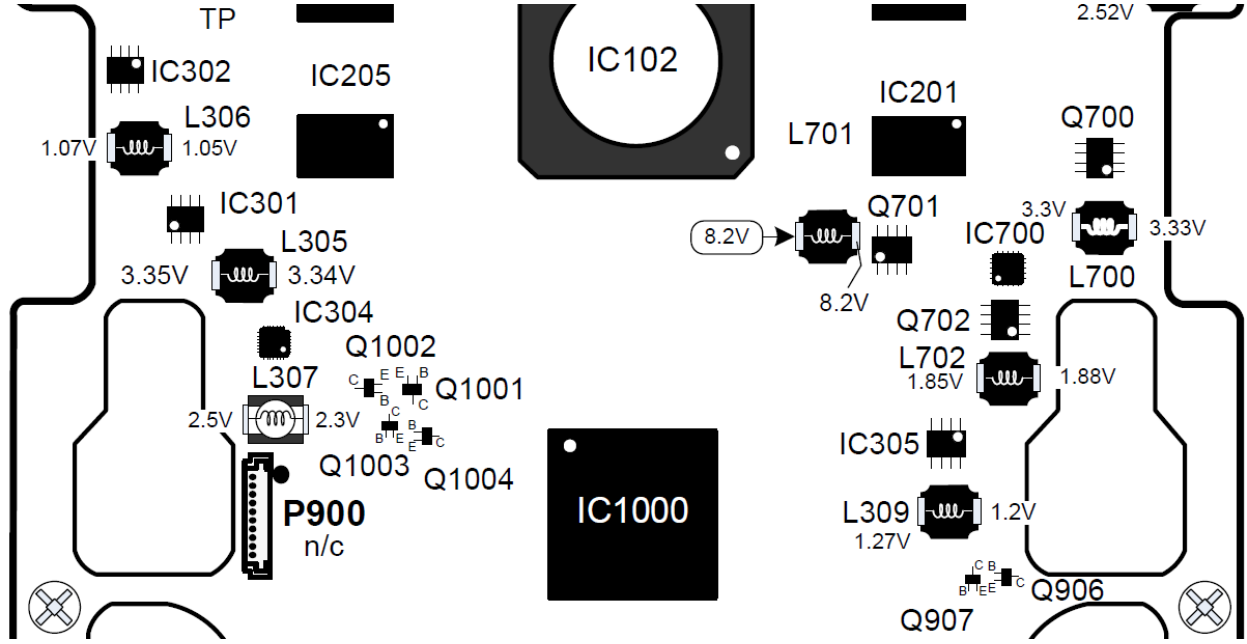
T-con Board P/N: EAX62110705(0)

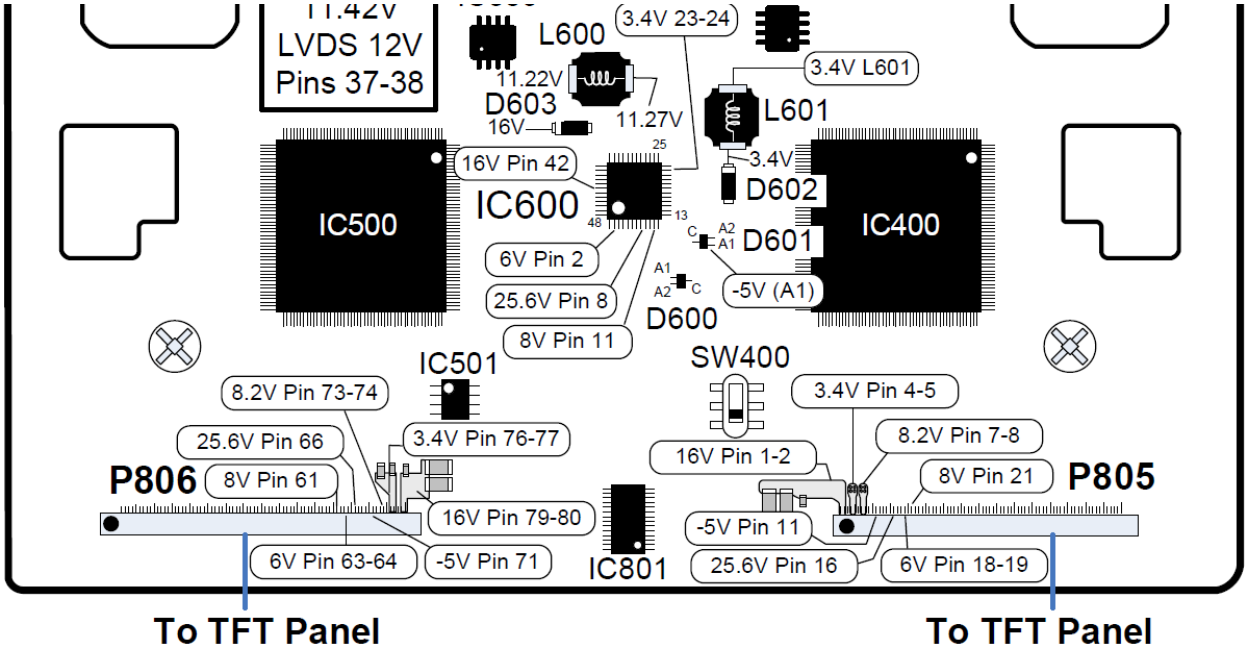
DESC or Panel Sticker Number: LC550EUC-SCA1




IC502
P803
P804
L802
IC307
11.42V
LVDS 12V
TP
IC200
P802
25MHz
X100
N/C
P101
IC310
IC308
2.53V
L314
2.52V
IC204
IC102
IC302
IC205
L306
1.07V
1.05V
IC201
L701
Q700
IC301
L305
3.35V
3.34V
Q701
8.2V
8.2V
IC700
3.3V
3.33V
L700
IC304
Q1002
Q702
L307
Q1001
L702
1.85V
1.88V
2.5V
2.3V
Q1003
Q1004
IC305
P900
n/c
IC1000
L309
1.27V
1.2V
Q906
Q907
IC1002
IC1001
IC600
B+ Source
11.42V
LVDS 12V
Pins 37-38
IC309
L600
11.22V
3.4V 23-24
IC306
3.4V L601
D603
16V
11.27V
L601
3.4V
D602
16V Pin 42
IC500
IC600
IC400
D601
6V Pin 2
-5V (A1)
25.6V Pin 8
D600
8V Pin 11
IC501
SW400
8.2V Pin 73-74
3.4V Pin 4-5
25.6V Pin 66
3.4V Pin 76-77
8.2V Pin 7-8
16V Pin 1-2
P806
8V Pin 61
8V Pin 21
P805
16V Pin 79-80
-5V Pin 11
IC801
6V Pin 63-64
-5V Pin 71
25.6V Pin 16
6V Pin 18-19
To TFT Panel
To TFT Panel

More Clear of LG 55LX6500 T-CON Board Layout:





P803 "T-CON" to P7802 "Main"

Pin	LABEL	Run	Diode
1	PANEL_VCC	11.55V	Open
2	PANEL_VCC	11.55V	Open
3	Gnd	Gnd	Gnd
4	Gnd	Gnd	Gnd

P804 "TCON" to P7803 "Main Board"

Pin	LABEL	Run	Diode
1	Gnd	Gnd	Gnd
2	E_TCK	0V	Open
3	E_TDO	3.33V	Open
4	E_TMS	0.35V	Open
5	E_TDI	3.32V	Open
6	Gnd	Gnd	Gnd

P802 "T-CON" to P7800 "MAIN Board"

Pin	Label	Run	Diode Check
1	Gnd	Gnd	Gnd
*2	3D_Sync_Out	0.03V	2.34V
3	V_SYNC	3.33V	1V
4	SDA3_3.3V	3.34V	1.73V
5	SCL3_3.3V	3.34V	1.73V
6	FRC_RESET	3.32V	Open
7	n/c	n/c	n/c
8	3DTV	0V	Open
9	3D_DIM	0V	Open
10	3D_DIM_2	0.05V	Open
11	n/c	n/c	n/c
12	RRXA0-	1.17V	1.67V
13	RRXA0+	1.19V	1.67V
14	RRXA1-	1.19V	1.67V
15	RRXA1+	1.17V	1.67V
16	RRXA2-	1.22V	1.67V
17	RRXA2+	1.14V	1.67V
18	Gnd	Gnd	Gnd
19	RRXACK-	1.16V	1.67V
20	RRXACK+	1.20V	1.67V
21	Gnd	Gnd	Gnd
22	RRXA3-	1.20V	1.67V
23	RRXA3+	1.14V	1.67V

Pin	Label	Run	Diode Check
24	RRXA4	1.26V	1.67V
25	RRXA4+	1.08V	1.67V
26	Gnd	Gnd	Gnd
27	n/c	n/c	n/c
28	RRXB0-	1.19V	1.67V
29	RRXB0+	1.19V	1.67V
30	RRXB1-	1.19V	1.67V
31	RRXB1+	1.16V	1.67V
32	RRXB2-	1.2V	1.67V
33	RRXB2+	1.14V	1.67V
34	Gnd	Gnd	Gnd
35	RRXBCK-	1.16V	1.67V
36	RRXBCK+	1.2V	1.67V
37	Gnd	Gnd	Gnd
38	RRXB3-	1.22V	1.67V
39	RRXB3+	1.14V	1.67V
40	RRXB4-	1.26V	1.67V
41	RRXB4+	1.09V	1.67V
42-46	Gnd	Gnd	Gnd
47	n/c	n/c	n/c
48-51	PANEL_VCC	11.59V	Open

*Pin 2
(1.6V) with 3D source
5.5V p/p 60 Hz
3D-Sync

P805 LVDS to Panel

PIN	LABEL	RUN	PIN	LABEL	RUN	PIN	LABEL	RUN
1	VDD (16V)	16V	28	V6	11.08V	54	RLMVCLKP	1.19V
2	VDD (16V)	16V	29	V7	10.28V	55	RLMVCLKN	1.18V
3	Gnd	Gnd	30	V9	8.31V	56	Gnd	Gnd
4	VCC (3.3V)	3.4V	31	V10	7.71V	57	RLMV4P	1.15V
5	VCC (3.3V)	3.4V	32	V12	3.37V	58	RLMV4N	1.24V
6	Gnd	Gnd	33	V13	4.94V	59	RLMV5P	1.34V
7	HVDD (8V)	8.2V	34	V14	3.75V	60	RLMV5N	1.22V
8	HVDD (8V)	8.2V	35	V15	2.68V	61	RLMV6P	1.12V
9	Gnd	Gnd	36	V16	1.97V	62	RLMV6N	1.23V
10	OPT_P	n/c	37	V17	0.27V	63	Gnd	Gnd
11	VGL-(5V)	(-5V)	38	V18	0.26V	64	RRMV0P	1.13V
12	Gnd	Gnd	39	Gnd	Gnd	65	RRMV0N	1.23V
13	GOE	0.83V	40	GSP	0V	66	RRMV1P	1.15V
14	GSC	2.3V	41	POL	1.66V	67	RRMV1N	1.23V
15	Gnd	Gnd	42	Gnd	Gnd	68	RRMV2P	1.15V
16	VGH (26V)	25.6V	43	SOE_R	0.25V	69	RRMV2N	1.23V
17	Gnd	Gnd	44	H_CONV	0.44V	70	Gnd	Gnd
18	VCOMRFB	6V	45	OPT_N	3.33V	71	RRMVCLKP	1.19V
19	VCOM ROUT	6V	46	Gnd	Gnd	72	RRMVCLKN	1.18V
20	Gnd	Gnd	47	RLMVOP	0.15V	73	Gnd	Gnd
21	Z_OUT	8V	48	RLMVON	0.17V	74	RRMV4P	1.13V
22	Gnd	Gnd	49	RLMV1P	0.14V	75	RRMV4N	1.24V
23	V1	15.75V	50	RLMV1N	1.24V	76	RRMV5P	1.11V
24	V2	15.75V	51	RLMV2P	1.13V	77	RRMV5N	1.12V
25	V3	14V	52	RLMV2N	1.22V	78	RRMV6P	1.12V
26	V4	13.35V	53	Gnd	Gnd	79	RRMV6N	1.22V
27	V5	12.27V				80	Gnd	Gnd

P806 LVDS to Panel

PIN	LABEL	RUN	PIN	LABEL	RUN	PIN	LABEL	RUN
1	Gnd	Gnd	28	Gnd	Gnd	54	V14	3.75V
2	LLMV0P	1.19V	29	LRMV4P	1.15V	55	V15	2.68V
3	LLMV0N	1.24V	30	LRMV4N	1.25V	56	V16	0.27V
4	LLMV1P	1.18V	31	LRMV5P	1.18V	57	V17	0.26V
5	LLMV1N	1.3V	32	LRMV5N	1.26V	58	V18	0.26V
6	LLMV2P	1.15V	33	LRMV6P	1.17V	59	Gnd	Gnd
7	LLMV2N	1.29V	34	LRMV6N	1.25V	60	Gnd	Gnd
8	Gnd	Gnd	35	Gnd	Gnd	61	Z_OUT	8V
9	LLMVCLKP	1.22V	36	OPT_N	3.33V	62	Gnd	Gnd
10	LLMVCLKN	1.23V	37	H_CONV	Gnd	63	VCOMLOUT	6V
11	Gnd	Gnd	38	GSP	0V	64	VCOMLFB	6V
12	LLMV4P	1.18V	39	POL	1.66V	65	Gnd	Gnd
13	LLMV4N	1.26V	40	Gnd	Gnd	66	VGH (26V)	25.6V
14	LLMV5P	1.26V	41	SOE_L	0.24V	67	Gnd	Gnd
15	LLMV5N	1.27V	42	Gnd	Gnd	68	GSC	2.3V
16	LLMV6P	1.16V	43	V1	15.75V	69	GOE	0.83V
17	LLMV6N	1.26V	44	V2	15.75V	70	Gnd	Gnd
18	Gnd	Gnd	45	V3	14V	71	VGL (-5V)	(-5V)
19	LRMV0P	1.17V	46	V4	12.26V	72	Gnd	Gnd
20	LRMV0N	1.28V	47	V5	11.07V	73	HVDD (8V)	8.2V
21	LRMV1P	1.15V	48	V6	11.07V	74	HVDD (8V)	8.2V
22	LRMV1N	1.26V	49	V7	10.27V	75	Gnd	Gnd
23	LRMV2P	1.17V	50	V9	8.31V	76	VCC (3.3V)	3.4V
24	LRMV2N	1.27V	51	V10	5.74V	77	VCC (3.3V)	3.4V
25	Gnd	Gnd	52	V12	Gnd	78	Gnd	Gnd
26	LRMVCLKN	1.21V	53	V13	4.94V	79	VDD (16V)	16V
27	LRMVCLKP	1.23V				80	VDD (16V)	16V

27) 79UB9800 Interconnect

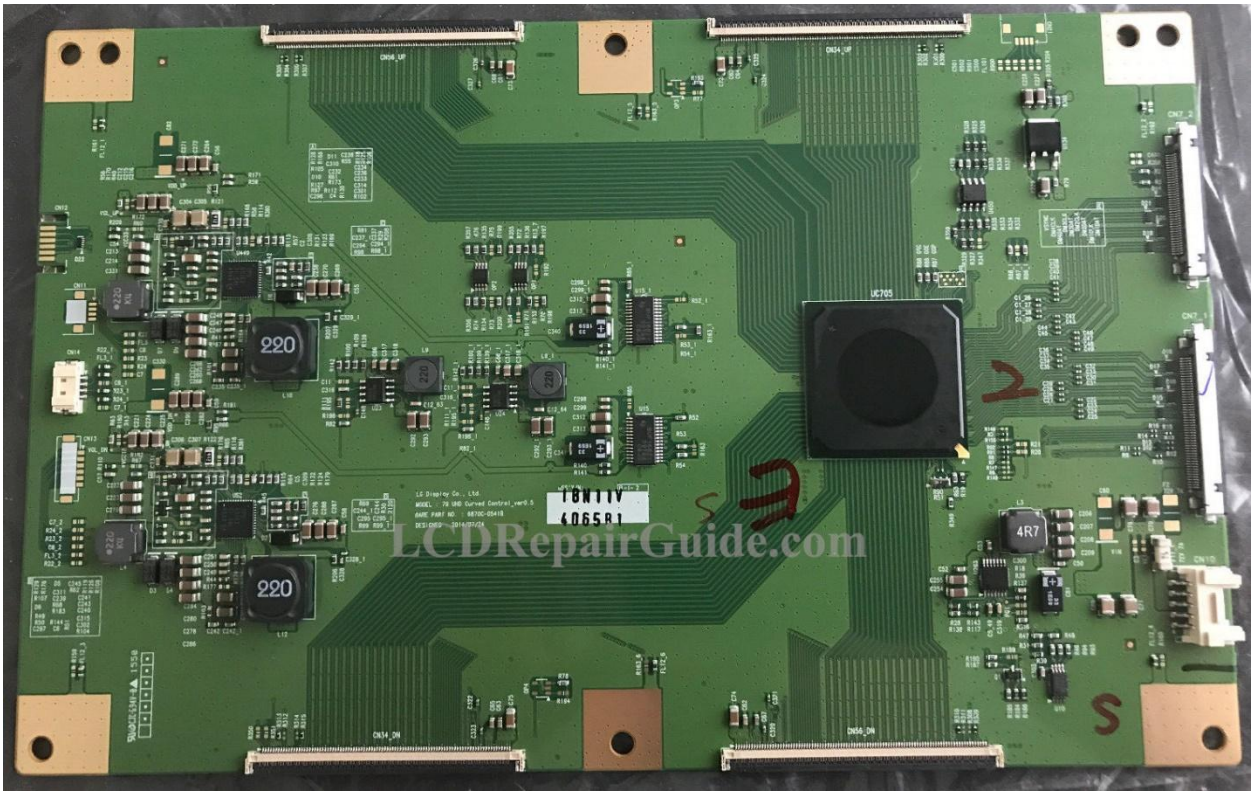
TV Models: LG 79UB9800, LG 79UF7700

PANEL P/N: EAJ62573301

Part Number:

T-con Board P/N: 6870C-0541B

DESC or Panel Sticker Number: (DESC: 79 UHD Curved Control)

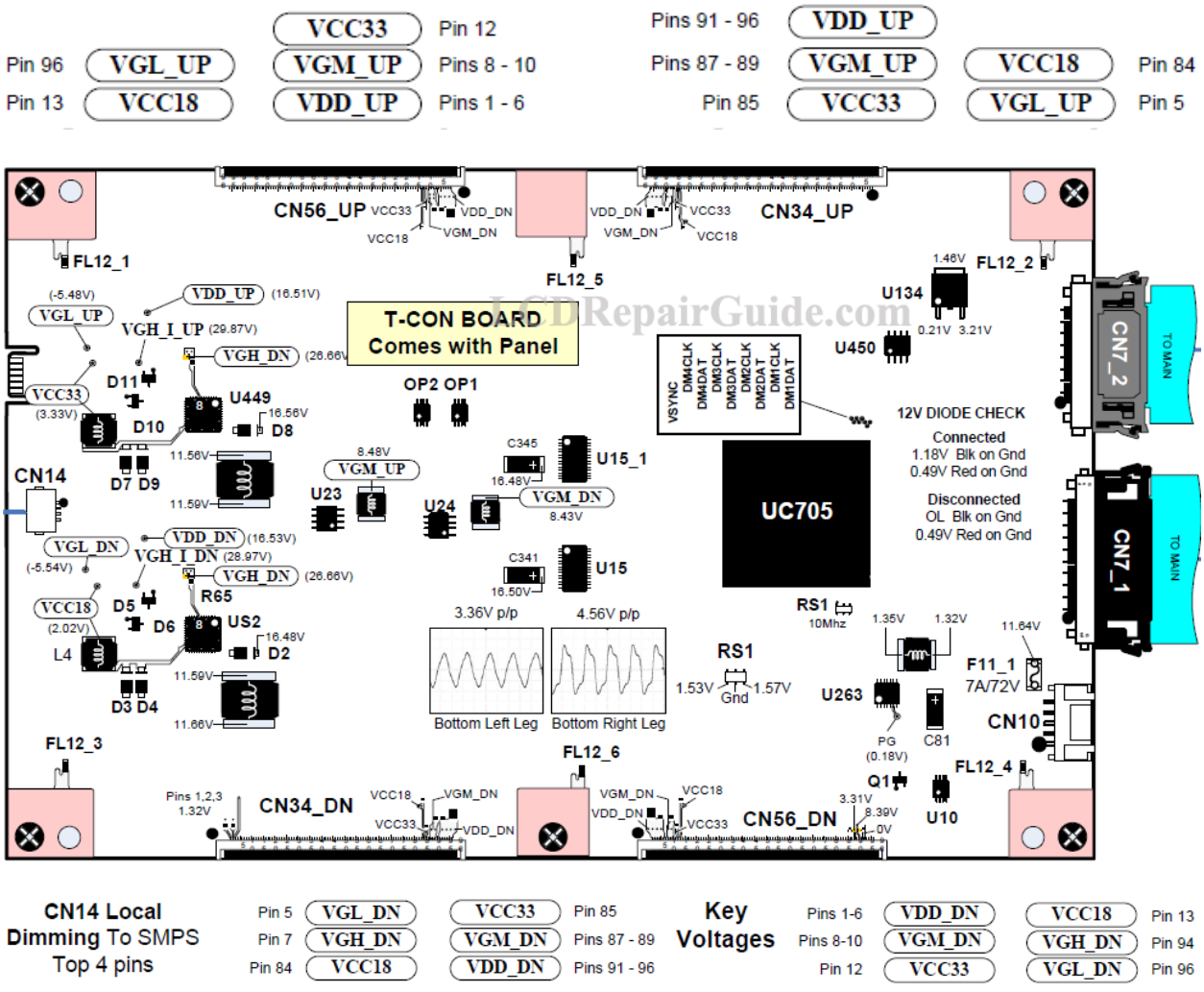


Warning:

Be sure to install the screws in the T-CON board before applying power. Damage to the board will occur.

PANEL TEST:

To run the Panel Test (Testing the T-CON without the Mainboard), simply unplug CN7_1 or CN7_2. Apply 12V to the Fuse F1 on the T-CON. Apply power to the set. (Backlights and Power Supply should already be working). T-CON outputs color patterns on the screen. This test confirms the T-CON board, Power Supply (PSU), Panel and Backlights are working normally.



CN10 "T-CON" to P13401 "Main"

PIN	LABEL	RUN	Diode Check
3-5	12V	11.66	OL
1-2	Gnd	Gnd	Gnd

P201 "SMPS Board" to P13002 "MAIN Board"

PIN	LABEL	STBY	RUN	Diode Check
28	*V_SYNC	0V	0.02V	OL
27	*SIN	0V	0.07V	OL
26	*Gnd	Gnd	Gnd	Gnd
25	*SCLK	0V	0.04V	OL
23-24	Gnd	Gnd	Gnd	Gnd
18-22	24V	0V	24.38V	1.12V
16-17	Gnd	Gnd	Gnd	Gnd
11-15	12V	0V	11.74V	0.44V
9-10	Gnd	Gnd	Gnd	Gnd
7-8	3.5V	3.57V	3.46V	OL
6	Gnd	Gnd	Gnd	Gnd
5	3.5V	3.57V	3.46V	OL
4	(4) P-DIM2	0V	0.94V	OL
3	(3) P-DIM	0V	0.16V~3.25V	OL
2	DRV_ON	0V	3.07V	1.66V
1	PWR_ON	0V	3.34V	1.15V

* The last 4 pins go to the T-CON board CN14.
Pin 25 to pin 4, 26 to pin 3, 27 to pin 2, 28 to pin 1